GoldStar

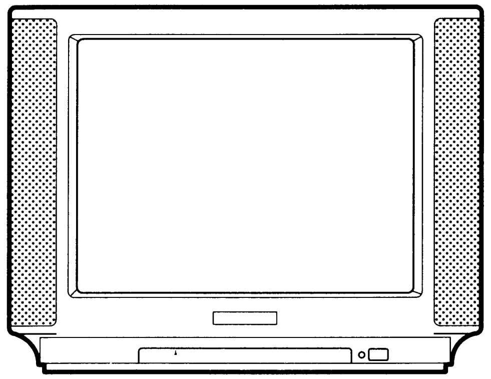
COLOR TV SERVICE MANUAL

CHASSIS : MC-15A

MODEL : CF-29C10

CAUTION

BEFORE SERVICING THE CHASSIS, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL.



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SPECIFICATIONS

Power Input Rating: 160 watts (nominal), AC 100-270volts, 50/60Hz.
AC230 volts, 50Hz(FOR RAZNO)
Receiveing TV System PAL/SECAM-B/G, NTSC 3.58/4.43 MULTI 26 SYSTEMS
Aerial Input Impedance: 75 ohm unbalanced type VHF and UHF
Receiving Channels: PAL B/G, SECAM B/G system
Any of VHF channel ....Channels 2 to 12
Any of UHF channels ....channels 21 to 69
PAL D/K, SECAM D/K system
Any of VHF channels ....channels 1 to 12
Any of UHF channels ....channels 21 to 69
PAL I system
Any of UHF channels ....channels 21 to 69
NTSC Standard (US M, JAPAN M) system
Any of VHF channels ....channels 2 to 13/1 to 12
Any of UHF channels ....channels 14 to 78/13 to 62
NTSC 3.58/5.5 System
NTSC 4.43/5.5 System ....VCR Play Back
PAL 50/60Hz System
SECAM 50/60Hz System ....VIDEO DISK Play Back
NTSC 50/60Hz System
Intermediate Frequencies: Picture I-F carrier frequency ....38.0 MHz
Sound I-F carrier frequency ....33.5/32.5/32.0/31.5 MHz
Chassis Construction: IC Solid State, Horizontal Chassis
Picture Tube:

Terrestrial-magnetism	112-C29A	-0.1Gauss	112-C29C	-0.4Gauss
	112-C29B,E	+0.4Gauss	112-C29D	+0.2Gauss

Sound Output: 12W X 2Way(MAX.)
Cabinet: Plastic, Table Top
Diemension
Height .... 596 mm
Width .... 760 mm
Depth ....516 mm

Features: On-screen display, VIDEO and AUDIO input terminals, Remote Control
Specifications are subject to change without notice.

SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Replacement Parts List.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

General Guidance

An **Isolation Transformer should always be used** during the servcing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitary that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by it's Neck.

X-RAY Radiation

Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the Picture Tube.
For continued X-RAY RADIATION protection, the replacement tube must be the same type tube as specified in the Replacement Parts List.

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.
Measure the high voltage.
The meter reading should indicate
23.5 ± 1.5KV: 14-19 inch or 26 ± 1.5KV: 19-21 inch or
29.0 ± 1.5KV: 25-29 inch
If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

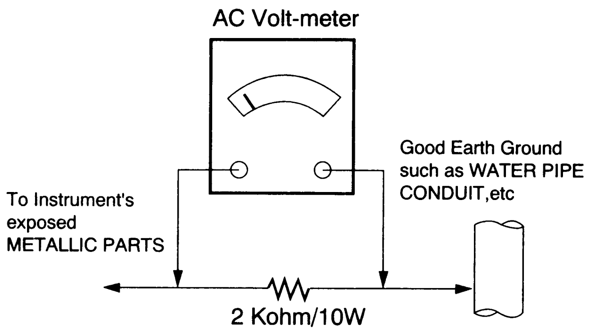
Before returning the receiver to the customer,

always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

Leakage Current Cold Check(Antenna Cold Check)
With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on positioin, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.
If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.
When the exposed metal has no return path to the chassis the reading must be infinite.
An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)
Plug the AC cord directly into the AC outlet.
Do not use a line Isolation Transformer during this check.
Connect 2K 10watt resistor between a known good earth ground (Water Pipe, Conduit, etc.) and the exposed metallic parts.
Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.
Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each exposed metallic part.
Any voltage measured must not exceed 1.4 volt RMS which is corresponds to 0.7mA.
In case any measurement is out of the limits specified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit


AC Volt-meter
To Instrument's exposed METALLIC PARTS
Good Earth Ground such as WATER PIPE CONDUIT,etc
2 Kohm/10W

SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the *SAFETY PRECAUTIONS* on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
   a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
   b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
   c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.
   CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
   d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe.
   Do not test high voltage by "drawing an arc".
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)
   CAUTION: This is a flammable mixture.
   Unless specified otherwise in this service manual, lubrication of contacts in not required.
6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.
   Always remove the test receiver ground lead last.
9. ***Use with this receiver only the test fixtures specified in this service manual.***
   CAUTION: Do not connect the test fixture ground strap to any heatsink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices.* Examples of typical ES devices are integrated circuits and some fieldeffect transistors and semicounductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the bruching together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500° F to 600° F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thoroughly clean the surfaces to be soldered. Use a mall wirebristle (0.5 inch, or 1.25cm) brush with a metal handle.
   Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
   a. Allow the soldering iron tip to reach normal temperature. (500° F to 600° F)
   b. Heat the component lead until the solder melts.
   c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
   CAUTION: Work quickly to avoid overheating the circuitboard printed foil.
6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach a normal temperature (500° F to 600° F)
   b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.
   c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil.
   d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement

Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush.
   (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor
Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device
Removal/Replacement

1. Heat and remove all solder from around the transistor leads.
2. Remove the heatsink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heatsink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendiculaly to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor
Removal/Replacement

1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.
   CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections

To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

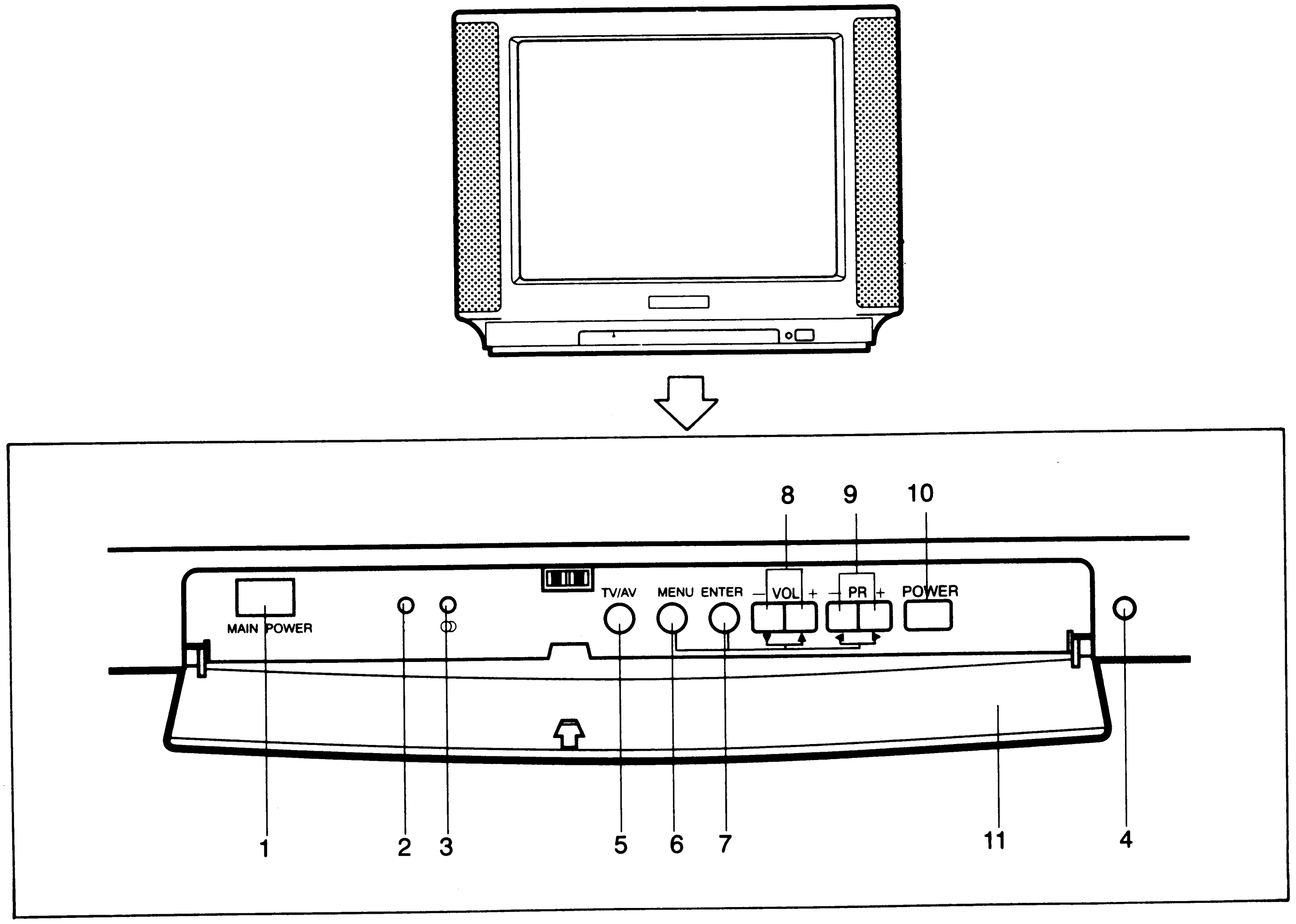
At Other Connections

Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side.
   Carefully crimp and solder the connections.
   CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

CONTROLS LOCATION

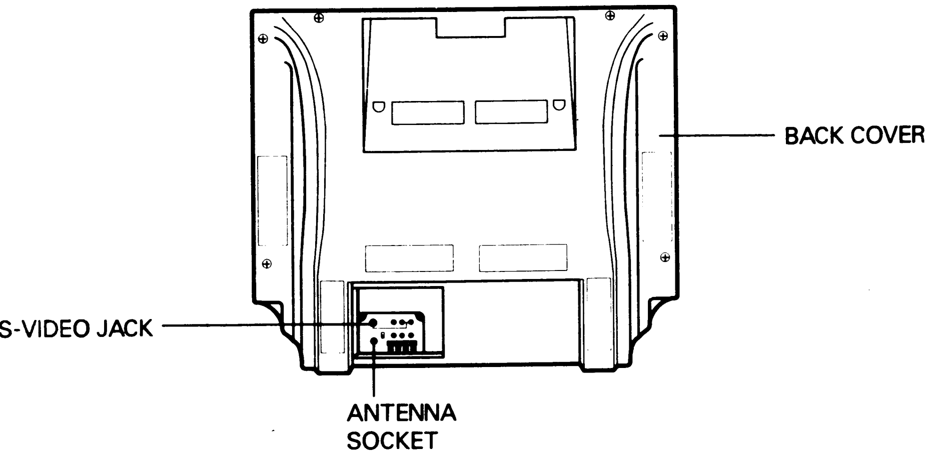
FRONT



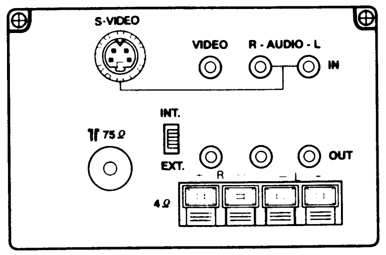
8
9
10
MAIN POWER
TV/AV
MENU
ENTER
VOL
PR
POWER
1
2
3
5
6
7
11
4

1. MAIN POWER BUTTON
2. STAND-BY INDICATOR
3. SOUND EFFECT (PSEUDO) INDICATOR
4. REMOTE CONTROL SENSOR
5. TV/AV MODE SELECTION BUTTON
6. MENU BUTTON
7. ENTER BUTTON
8. VOLUME UP/DOWN & UPPER/LOWER MODE BUTTONS
9. PROGRAM UP/DOWN & LEVEL UP/DOWN BUTTONS
10. SUB-POWER BUTTON
11. PANEL DOOR

BACK



BACK COVER
S-VIDEO JACK
ANTENNA SOCKET



S-VIDEO
VIDEO
R - AUDIO - L
IN
INT.
EXT.
75Ω
OUT
R
L
4Ω

DISASSEMBLY INSTRUCTIONS

BACK CABINET REMOVAL

Remove 8 screws residing on the back cabinet and carefully separate the back cabinet from the front cabinet.

MAIN CHASSIS REMOVAL

1. Remove a screw holding the main chassis to the front cabinet.
2. Grasp both sides of the main chassis, pull it backward approximately 1/2".
3. Lift the main chassis up and it may be removed.

SPEAKER ASSY REMOVAL

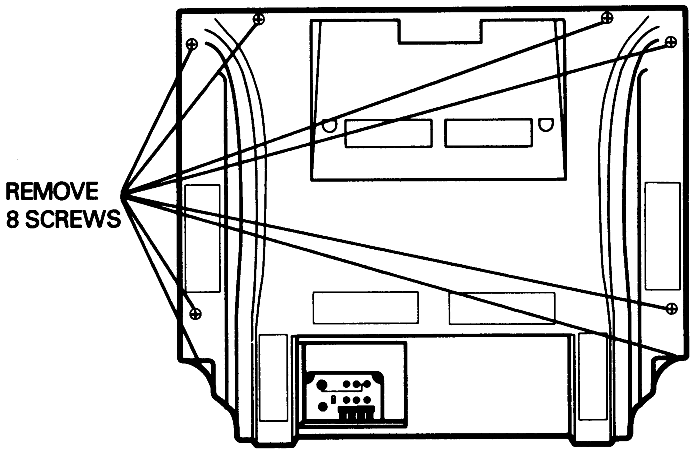
1. Remove P604 and P605 connectors between the speaker and the main chassis.
2. To remove the speaker, pull out the speaker supporter from the front cabinet.

CPT REMOVAL

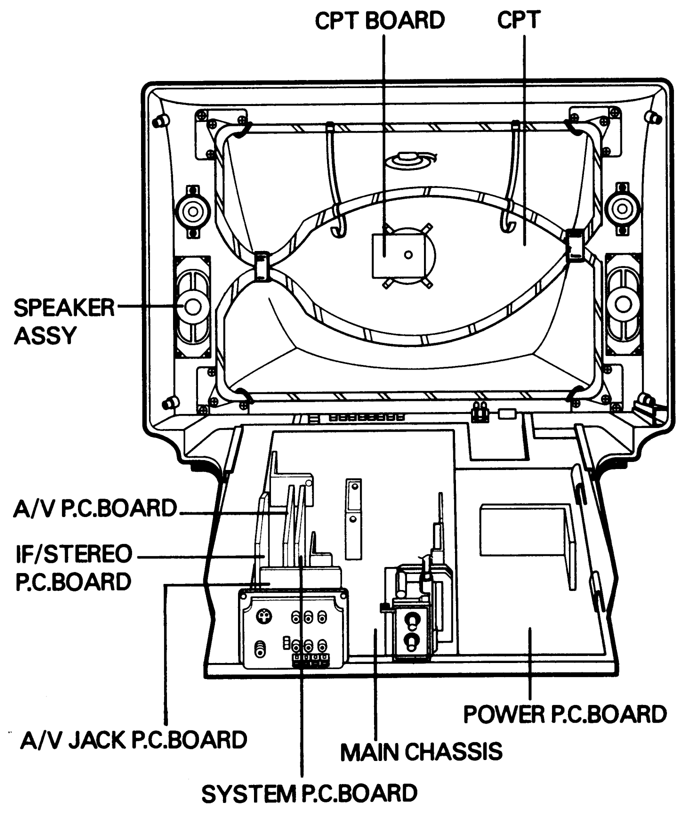
1. Pull out the CPT board from the CPT neck.
2. Place the front cabinet on soft material so as not to mar the front surface or damage control knobs.
3. Remove 4 nuts securing the picture tube mounting brackets to the front cabinet.
4. Carefully separate CPT from the front cabinet.

PICTURE TUBE HANDLING CAUTION

Due to high vacuum and large surface area of picture tube, great care must be exercised when handling picture tube. Always lift picture tube by grasping it firmly around face-plate.
NEVER LIFT TUBE BY ITS NECK. The picture tube must not be scratched or subjected to excessive pressure as fracture of glass may result in an implosion of considerable violence which can cause personal injury or property damage.



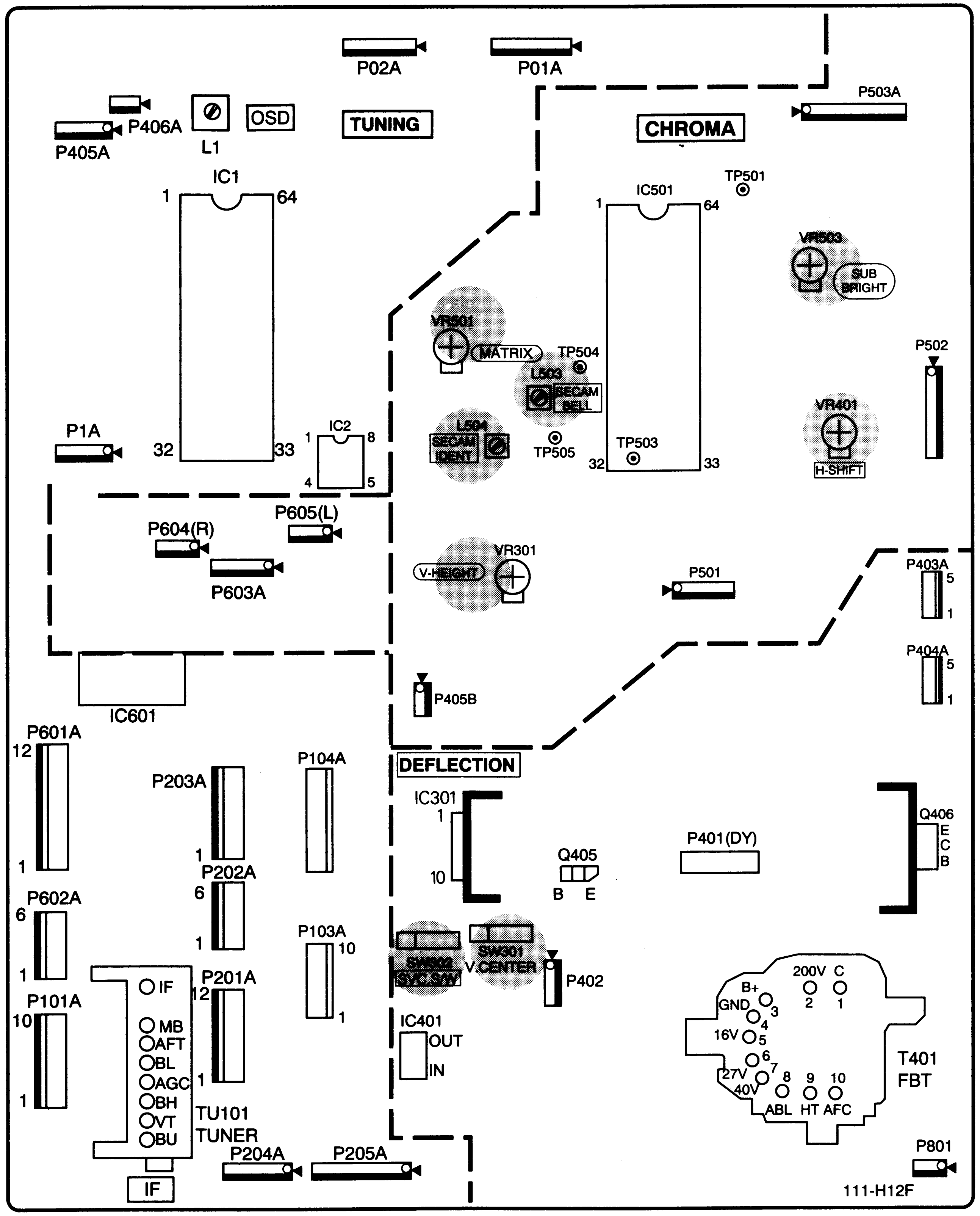
REMOVE
8 SCREWS



CPT BOARD
CPT
SPEAKER ASSY
A/V P.C.BOARD
IF/STEREO P.C.BOARD
A/V JACK P.C.BOARD
MAIN CHASSIS
POWER P.C.BOARD
SYSTEM P.C.BOARD

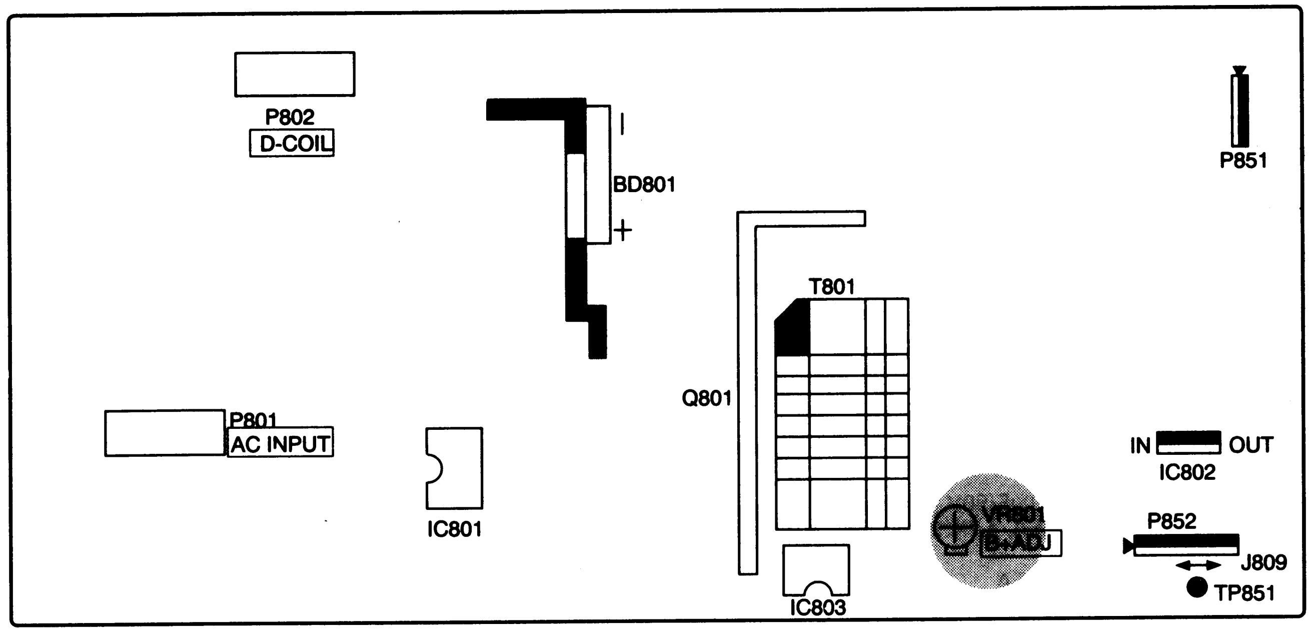
Alignment/Test Point Location Guide

1. MAIN P.C.Board



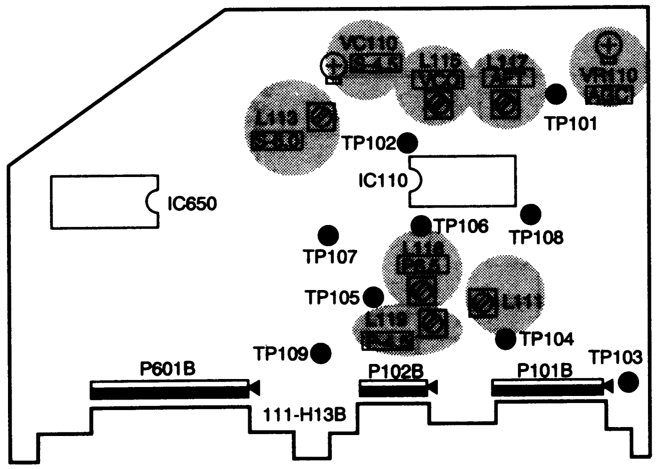
P02A
P01A
P503A
P406A
P405A
L1
OSD
TUNING
CHROMA
IC1
1
64
32
33
IC501
1
64
32
33
TP501
VR503
SUB BRIGHT
VR501
MATRIX
TP504
L503
SECAM BELL
L504
SECAM IDENT
TP505
TP503
P502
VR401
H-SHIFT
P1A
IC2
1
8
4
5
P604(R)
P605(L)
P603A
VR301
V-HEIGHT
P501
P403A
5
1
P404A
5
1
P405B
IC601
P601A
12
1
P203A
1
P104A
DEFLECTION
IC301
1
10
Q405
B E
P401(DY)
Q406
E
C
B
P602A
6
1
P202A
6
1
P103A
10
1
SW302
SVC.S/W
SW301
V.CENTER
P402
P101A
10
1
IF
MB
AFT
BL
AGC
BH
VT
BU
P201A
12
1
TU101
TUNER
IC401
OUT
IN
200V
C
B+
GND
3
2
1
4
16V
5
6
7
27V
40V
8
9
10
ABL
HT
AFC
T401
FBT
P204A
P205A
P801
IF
111-H12F

2. POWER P.C.BOARD



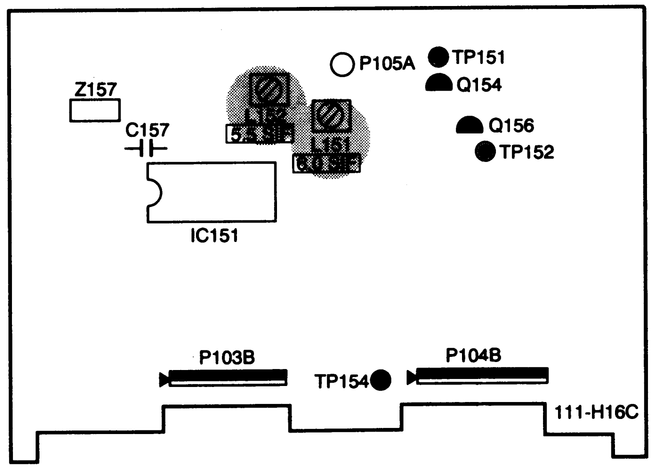
P802
D-COIL
BD801
+
P851
T801
Q801
P801
AC INPUT
IC801
IN
OUT
IC802
VR801
B+ADJ
P852
J809
TP851
IC803

3. IF/STEREO P.C.BOARD



VC110
L115
VCO
L117
AFT
VR110
AGC
L113
TP101
TP102
IC110
IC650
TP106
TP108
TP107
L116
TP105
L111
L118
TP104
TP109
TP103
P601B
P102B
P101B
111-H13B

4. SYSTEM P.C.BOARD



Z157
C157
L152
5.5 SIF
L151
6.0 SIF
P105A
TP151
Q154
Q156
TP152
IC151
P103B
TP154
P104B
111-H16C

ADJUSTMENT INSTRUCTIONS

1.APPLICATION

This instruction is applicable to all models using the MC-15A chassis.

2. SPECIFICATION

(1) CIRCUMFERENCE CONDITION

If there is no particular guidance, adjust MC-15A chassis on the following conditions.

(2) NECESSARY INSTRUMENTS

1) PIF/SIF Board Alignment Instruments

- Sweep Generator and Marker Unit
- Plug In Unit (450-U82)
- Alignment Scope (5121A)
- AM-FM Sig. Generator (MSG-274E)
- DC Power Supplier (0-20V, 1A DC): 2EA
- Digital Multimeter: 1EA
- Detector 1set
- Capacitor: Ceramic, 0.01uF/50V, 2EA
- Resistor: 3.3K(1/8W) 1EA, 4.7K(1/8W) 1EA, 1K(1/8W)) 2EA, 10K(1/8W) 2EA
- Transistor: KTC1815-Y, 1EA
- Switch: Button SW, 1EA

2) System Converter Board Alignment Instruments

- DC Power Supplier (0-20V, 1A DC): 1EA
- Oscilloscope: 1EA
- Digital Multimeter: 1EA
- FM-AM Signal Generator (MSG-274E)
- Resistor: 10K Ω (1/8W) 1EA
- Coupling Condenser: 0.01uF/50 Ceramic, Condenser, 2EA

3) Main Board Alignment Instruments

- Color Signal Generator (PAL/SECAM)
- Oscilloscope
- Digital Multimeter
- TV-Color Analyzer (TV-2130: Minoltameter): 1EA

4) X-RAY Protector Circuit Operating Test Instruments

- DC Power Supplier (0-20V, 1A): 1EA

(3) SIGNAL

If there is no particular guidance, use the standard color signal (PM5514 Digital Signal) with 70dBu-80dBu.

(4) POWER SOURCE

AC110V ±20%, 220V ±20% (50/60Hz)

3. ADJUSTMENT

3-1. PIF/SIF BOARD ADJUSTMENT

1) Picture IF Trap Adjustment

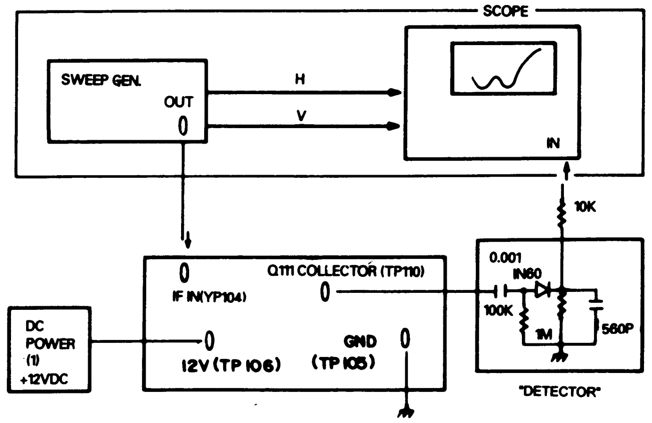

SCOPE
SWEEP GEN.
OUT
H
V
IN
10K
0
IF IN(YP104)
Q111 COLLECTOR (TP110)
0.001
IN60
100K
1M
560P
DC
POWER
(1)
+12VDC
12V (TP 106)
GND
(TP 105)
"DETECTOR"

Figure 1. Connection Diagram of Equipment

(1) Connect as shown in figure 1 and supply with power source (TP109: GND)

(2) Adjust L119 so that 33.5MHz marker (P-4.5MHz) point may be minimum.

(3) Adjust L118 so that 32.0MHz marker (P-6.0MHz) point may be minimum.

(Marker Frequency: 32.0, 33.5MHz)

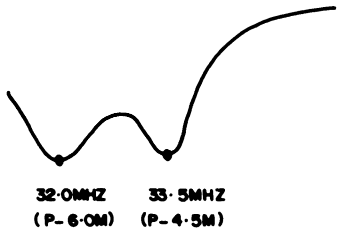

32·OMHZ
(P-6·OM)
33·5MHZ
(P-4·5M)

Figure 2

3-2. PIF/SIF ADJUSTMENT

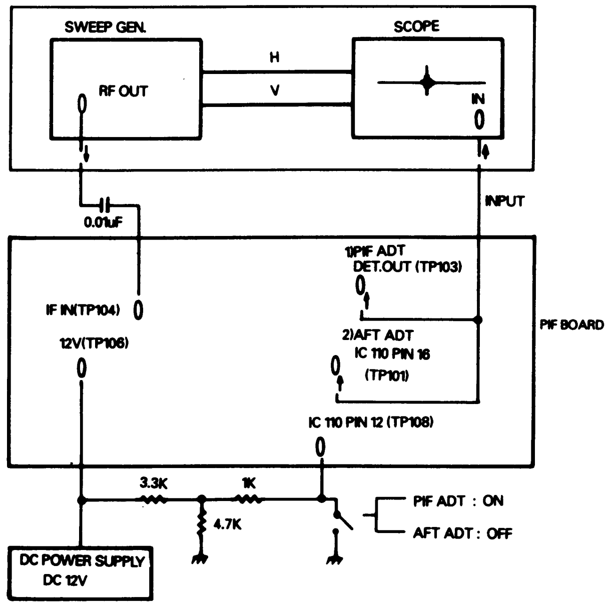

SWEEP GEN.
SCOPE
RF OUT
H
V
IN
INPUT
0.01uF
1)PIF ADT
DET.OUT (TP103)
IF IN(TP104)
12V(TP106)
2)AFT ADT
IC 110 PIN 16
(TP101)
PIF BOARD
IC 110 PIN 12 (TP108)
3.3K
1K
4.7K
PIF ADT : ON
AFT ADT : OFF
DC POWER SUPPLY
DC 12V

Figure 3. PIF and AFT Adjustment

1) PIF Adjustment

(1) Connect as shown in figure 3, and then DC power supplies on.

(2) Adjust the Gain Control Knob of Alignment Scope so that Beat Output may become proper as shown in figure 4.

(3) Adjust L115 so that Beat Waveform and Marker point (38.0MHz) may be on the same location as shown in figure 4.

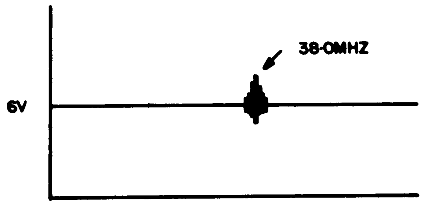


Figure 4

2) AFT Adjustment

(1) After finishing PIF adjustment, move input terminal of Scope to the pin 16 of IC110.

(2) Adjust the Gain Control Knob to be proper.

(3) Adjust L117 so that the scope waveform should be as shown in figure 5.

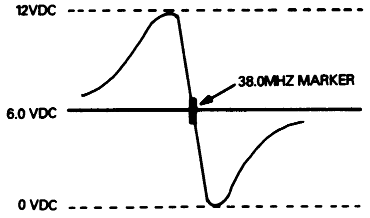

12VDC
38.0MHZ MARKER
6.0 VDC
0 VDC

Figure 5

3) SIF Adjustment

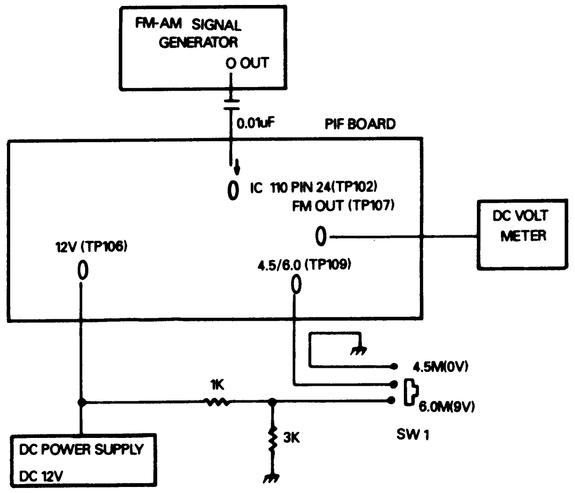

FM-AM SIGNAL
GENERATOR
O OUT
0.01uF
PIF BOARD
IC 110 PIN 24(TP102)
FM OUT (TP107)
DC VOLT
METER
12V (TP106)
4.5/6.0 (TP109)
4.5M(0V)
1K
6.0M(9V)
SW 1
3K
DC POWER SUPPLY
DC 12V

Figure 6

(1) 6.0 MHz ADJUSTMENT

- Connect the 6.0MHz signal of FM-AM Signal Generator to pin 24 of IC110 through a condenser 0.01uF.
  (Modulation: 400Hz/15KHz deviation 100dBu)
- SW1 sets in 6.0MHz.
- Connect the DC voltmeter to FM OUT (TP107)
- Adjust L113 so that the reading on the DC voltmeter may become DC 5.5 ± 0.5V.

(2) 4.5MHz ADJUSTMENT

- SW1 sets in 4.5MHz.
- Connect the 4.5MHz signal of SIF IN to pin 24 of IC110 (SIF IN Terminal) (Modulation: 400Hz/30KHz deviation 100dBu)
- Connect the DC voltmeter to FM OUT (TP107)
- Adjust VC110 so that the reading on the DC voltmeter may become DC 5.5 ± 0.5V.

3-3. SYSTEM CONVERTER BOARD ADJUSTMENT

1) 6.0MHz SIF OSC. Coil(L151) Adjustment

(1) Supply +12V to the System Converter Board (TP151).

(2) Connect a 10K Ω resistor between pin 18 and 19 of IC151.

(3) Apply the 6.0MHz signal (No modulation, 100dBu) of FM-AM Signal Generator output to Base of Q156 through a condenser 0.01uF.

(4) Connect oscilloscope to pin 9 of IC151.

(5) Adjust L151 so that the response on oscilloscope can be maximum.

(6) Remove the 10K Ω resistor between pin 18 and 19 after finishing adjustment.

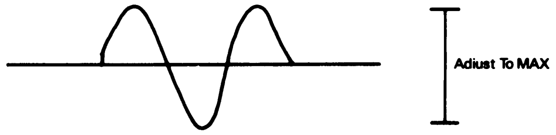

Adiust To MAX

Figure 7

2)5.5MHz SIF OSC. Coil (L152) Adjustment

(1) Supply +12VDC to the System Converter Board (TP151).

(2) Supply +12VDC VB terminal (TP154) through a 10K ohm resistor.

(3) Apply the 5.5MHz signal (No modulation, 100dBu) of FM-AM Signal Generator Output to the position which Z157 output and C157 meet at.

(4) Connect DC voltmeter to pin 18 of IC151.

(5) Adjust L152 so that the response on DC voltmeter may become 4.5+0, -0.2VDC.

3-4. +B VOLT POWER SUPPLY ADJUSTMENT (VR801, VR851)

1) +B Adjustment of Stand-By (VR801)

(1) Set the stand-by (AC Input: 100-270V, 50/60Hz.
FOR RAZNO: AC 230V, 50Hz)

(2) Connect the terminal(+) of Digital-Multimeter to TP851 (J809) and terminal(-) to V.OUT Heat Sink Plate (IC301).

(3) Adjust VR801 to be 120 ±0.2VDC.

2) VR851 Adjustment

(1) Receive the standard PAL signal (CH5 Digital Pattern) and set the Contrast 80%, Brightness 65%, Color 50%.

(2) Check if the AC input is 100-270V, 50/60Hz.
(FOR RAZNO : AC 230V, 50Hz)

(3) Connect the terminal(+) of Digital-Multimeter to TP851 (J809) and terminal(-) to V.OUT Heat Sink Plate (IC301).

(4) Adjust VR851 to be 120 ±0.2VDC.

PURITY AND CONVERGENCE ADJUSTMENT

CAUTION: Convergence and Purity have been factory aligned. Do not attempt to tamper with these alignments. However, the effects of adjacent receiver components, or replacement of picture tube or deflection yoke may require the need to readjust purity and convergence. Convergence magnet assembly and rubber wedges need mechanical positioning following the figure 12. Before attempting any convergence adjustments this receiver should be operated for at least fifteen minutes. If adjustment is required the adjustments should be made in the following sequence.

COLOUR PURITY ADJUSTMENT

1. Demagnetize the picture tube and cabinet using a degaussing coil.
2. Turn the CONTRAST and BRIGHTNESS controls to maximum.
3. Select the purity pattern consisted of green only on the pattern generator.
4. Loosen the clamp screw holding the yoke, and slide the yoke backward to provide vertical green belt (zone) in the picture screen.
5. Remove the Rubber Wedges.
6. Rotate and spread the tabs of the purity magnet (See figure 13) around the neck of the picture tube until the green belt is in the center of the screen. At the same time, center the raster vertically.
7. Move the yoke slowly forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temporarily.
8. Check purity of the red and blue rasters by selecting the purity pattern of pattern generator.
9. Obtain a white raster, referring to "WHITE BALANCE ADJUSTMENT".
10. Proceed with convergence adjustment.

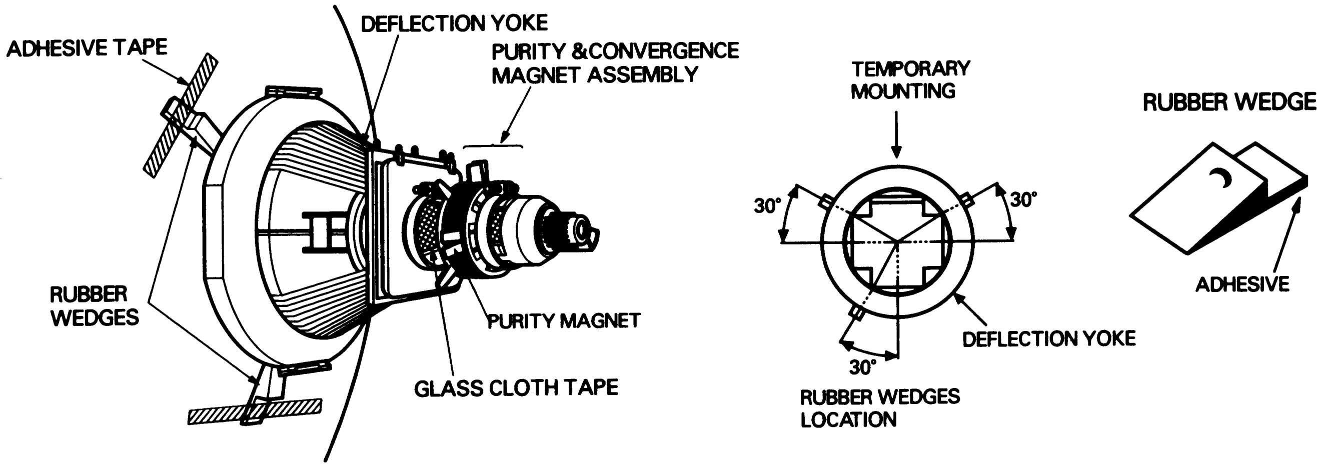

ADHESIVE TAPE
DEFLECTION YOKE
PURITY &CONVERGENCE MAGNET ASSEMBLY
RUBBER WEDGES
PURITY MAGNET
GLASS CLOTH TAPE
TEMPORARY MOUNTING
30°
30°
30°
DEFLECTION YOKE
RUBBER WEDGES LOCATION
RUBBER WEDGE
ADHESIVE

Figure 12

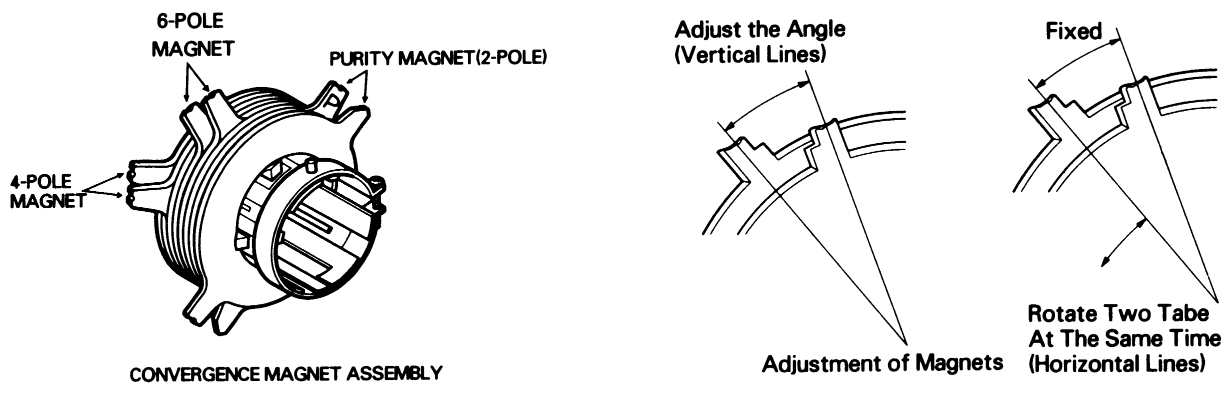

6-POLE MAGNET
PURITY MAGNET(2-POLE)
4-POLE MAGNET
CONVERGENCE MAGNET ASSEMBLY
Adjust the Angle (Vertical Lines)
Fixed
Adjustment of Magnets
Rotate Two Tabe At The Same Time (Horizontal Lines)

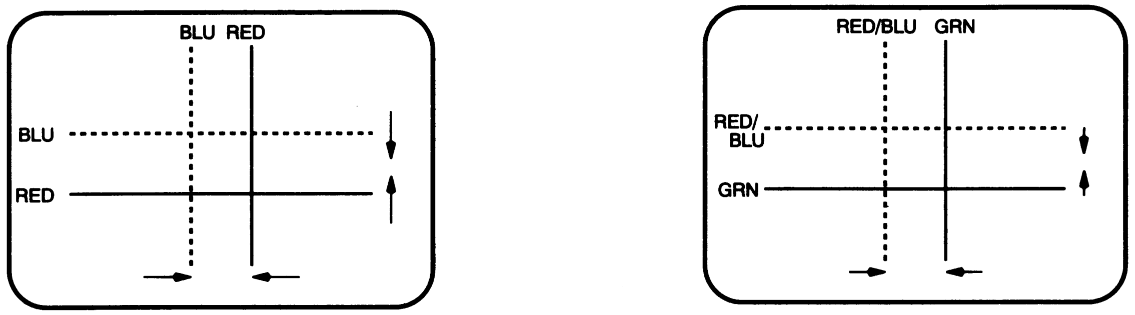
Figure 13

CENTER CONVERGENCE ADJUSTMENT

1. Receive crosshatch pattern with a colour bar signal generator.
2. Adjust the BRIGHTNESS and CONTRAST controls for well defined pattern.
3. Adjust two tabs of the 4-pole magnets to change the angle between them (See figure 13) and superimpose the red and blue vertical lines in the center area of the picture screen. (See figure 14)
4. Turn both tabs at the same time keeping their angles constant to superimpose red and blue horizontal lines at the center of the screen. (See figure 14)
5. Adjust two tabs of 6-pole magnets to superimpose red/blue line with green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 1,2,3, keeping in mind red, green and blue movements, because 4-Pole magnets and 6-Pole magnets interact and make dot movement complex.

CIRCUMFERENCE CONVERGENCE ADJUSTMENT

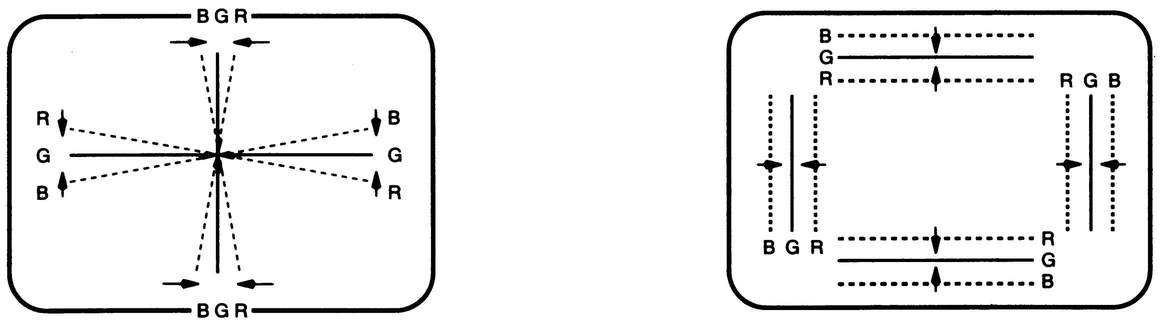
1. Loosen the clamping screw of DY to allow the yoke to tilt.
2. Adjust DY to obtain a better convergence in the circumference by orbital movement of the front of the yoke, then secure the DY in appropriate position by placing the placing the wedges as illustrates in figure 14. Tighten screw holding the DY. Stick 3 adhesive tapes on wedges as shown in figure 12.


BLU RED
BLU
RED
RED/BLU GRN
RED/BLU
GRN

4-Pole Magnets Movement

6-Pole Magnets Movement

Center Convergence by Convergence Magnets


B G R
R
G
B
B
G
R
B G R
B
G
R
R G B
B G R
R
G
B

Incline the Yoke up (or down)

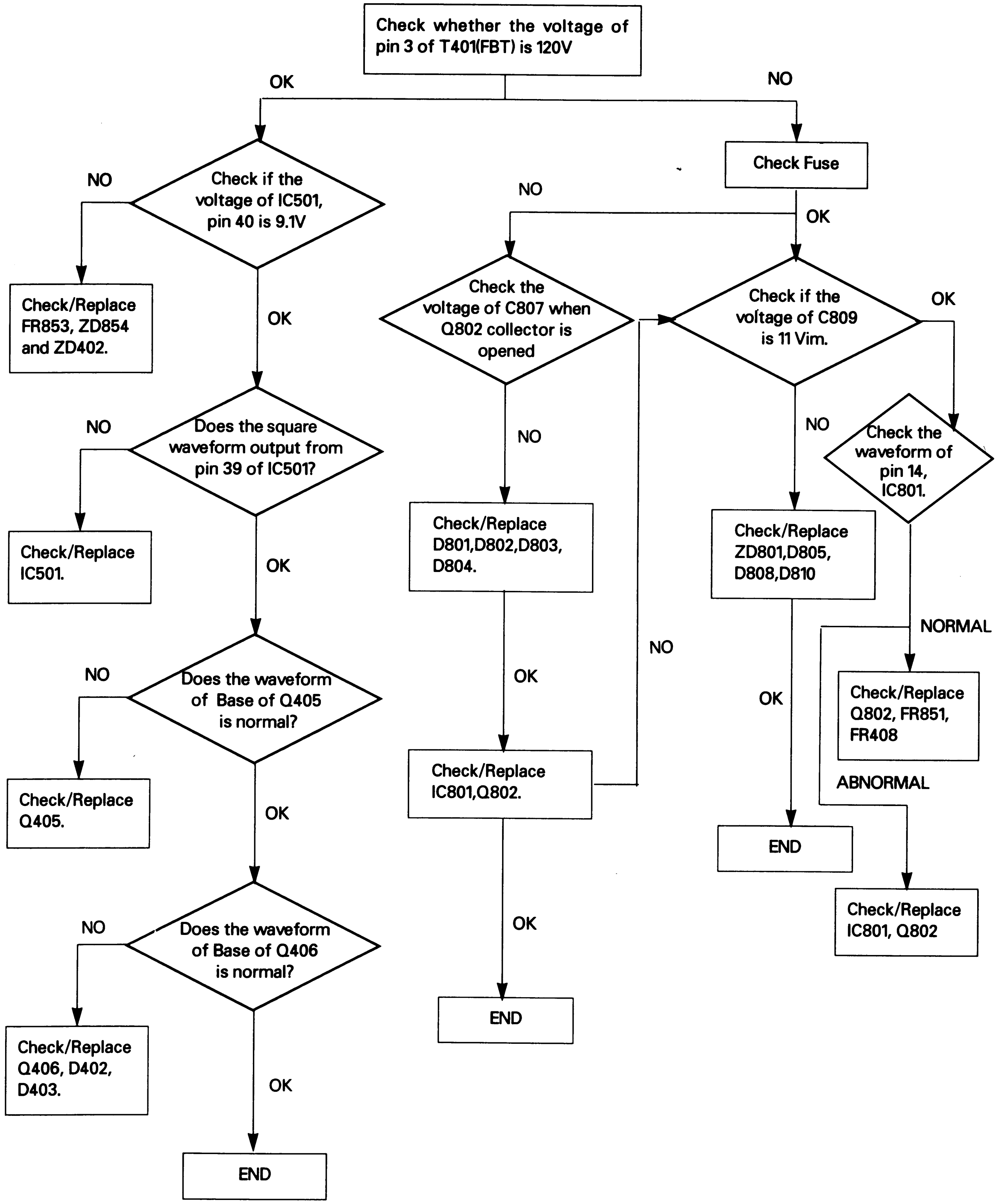
Incline the Yoke right (or left)

Circumference Convergence by Deflection Yoke

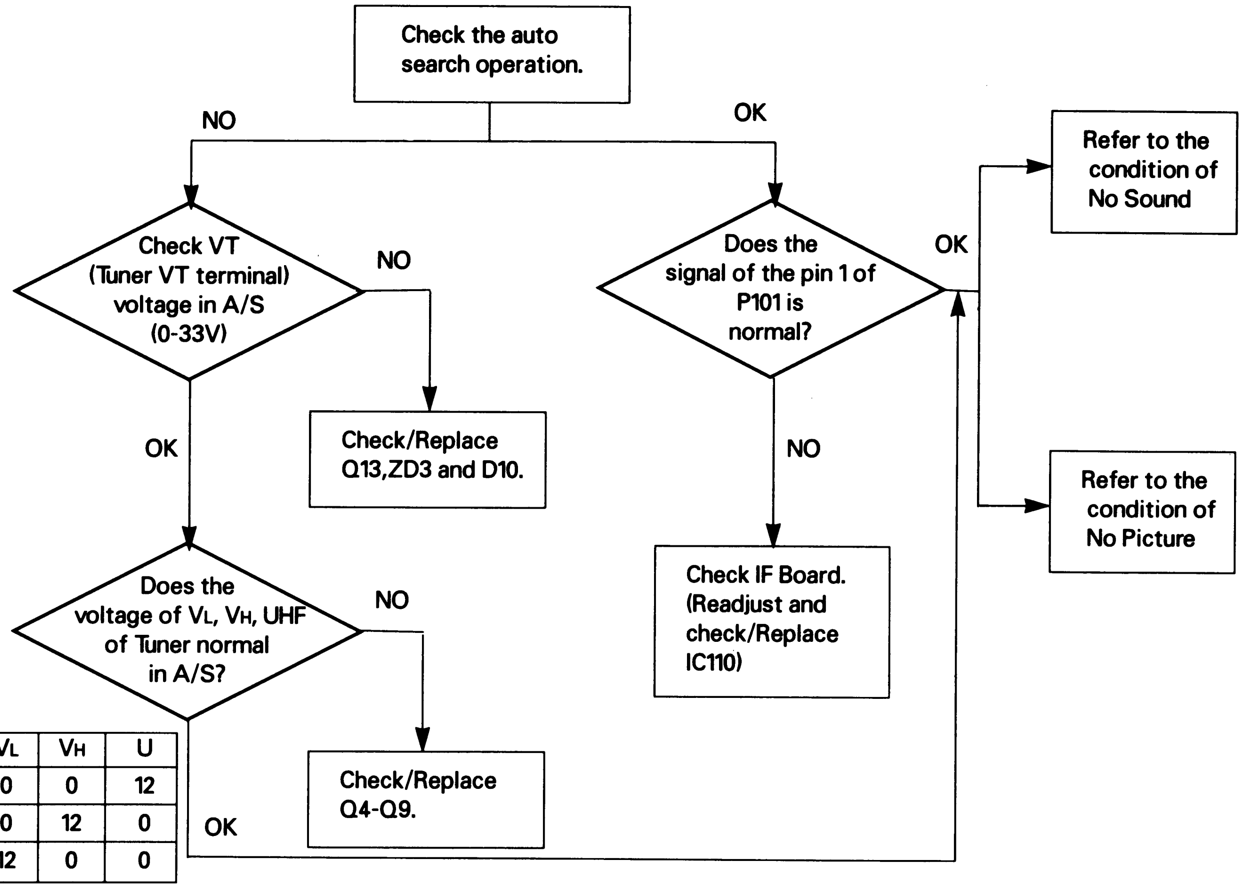
Figure 14. DOT MOVEMENT PATTERN

TROUBLESHOOTING GUIDE

1. NO RASTER

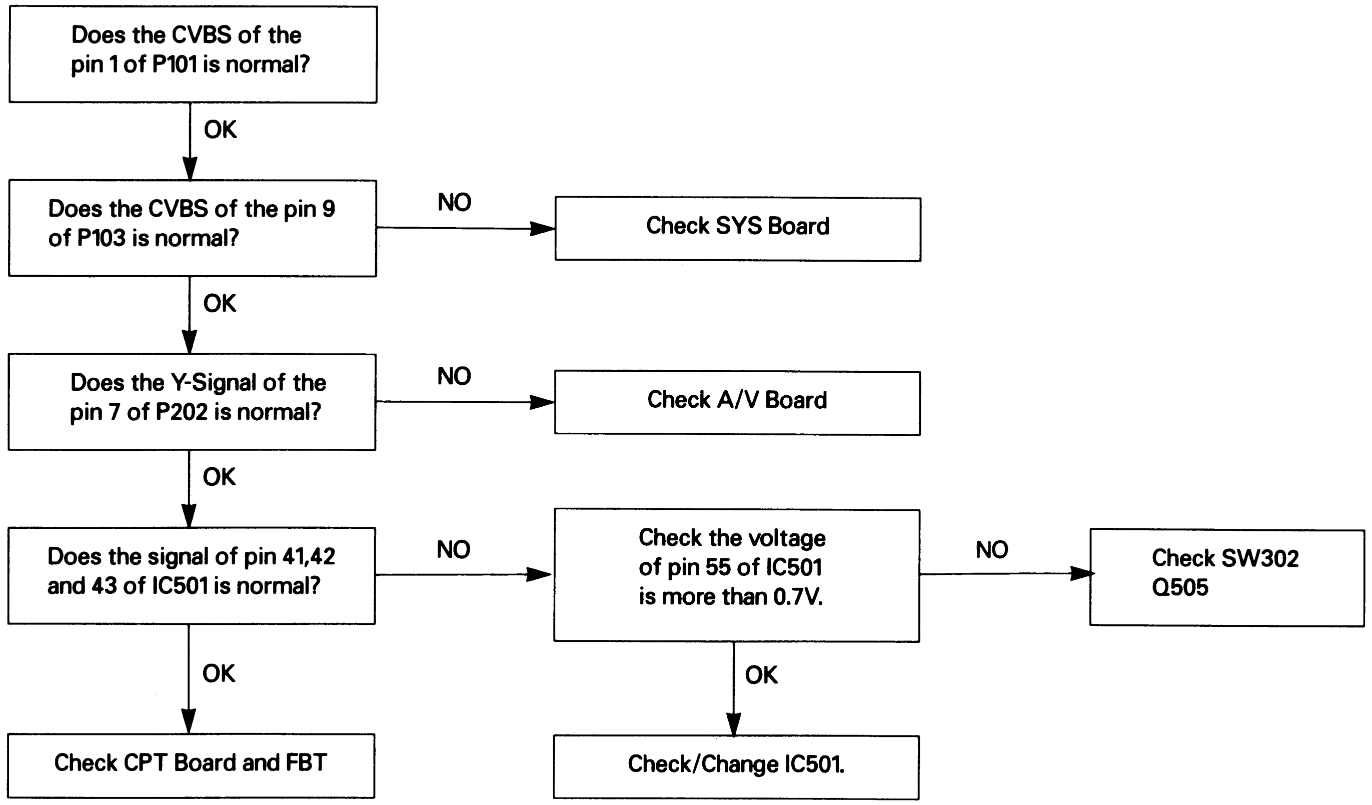

Check whether the voltage of pin 3 of T401(FBT) is 120V
OK
NO
Check if the voltage of IC501, pin 40 is 9.1V
NO
Check/Replace FR853, ZD854 and ZD402.
OK
Does the square waveform output from pin 39 of IC501?
NO
Check/Replace IC501.
OK
Does the waveform of Base of Q405 is normal?
NO
Check/Replace Q405.
OK
Does the waveform of Base of Q406 is normal?
NO
Check/Replace Q406, D402, D403.
OK
END
Check Fuse
NO
OK
Check the voltage of C807 when Q802 collector is opened
NO
Check/Replace D801,D802,D803, D804.
OK
Check/Replace IC801,Q802.
OK
END
NO
Check if the voltage of C809 is 11 Vim.
NO
Check/Replace ZD801,D805, D808,D810
OK
END
OK
Check the waveform of pin 14, IC801.
NORMAL
Check/Replace Q802, FR851, FR408
ABNORMAL
Check/Replace IC801, Q802

2. NO SOUND, NO PICTURE (RASTER OK)

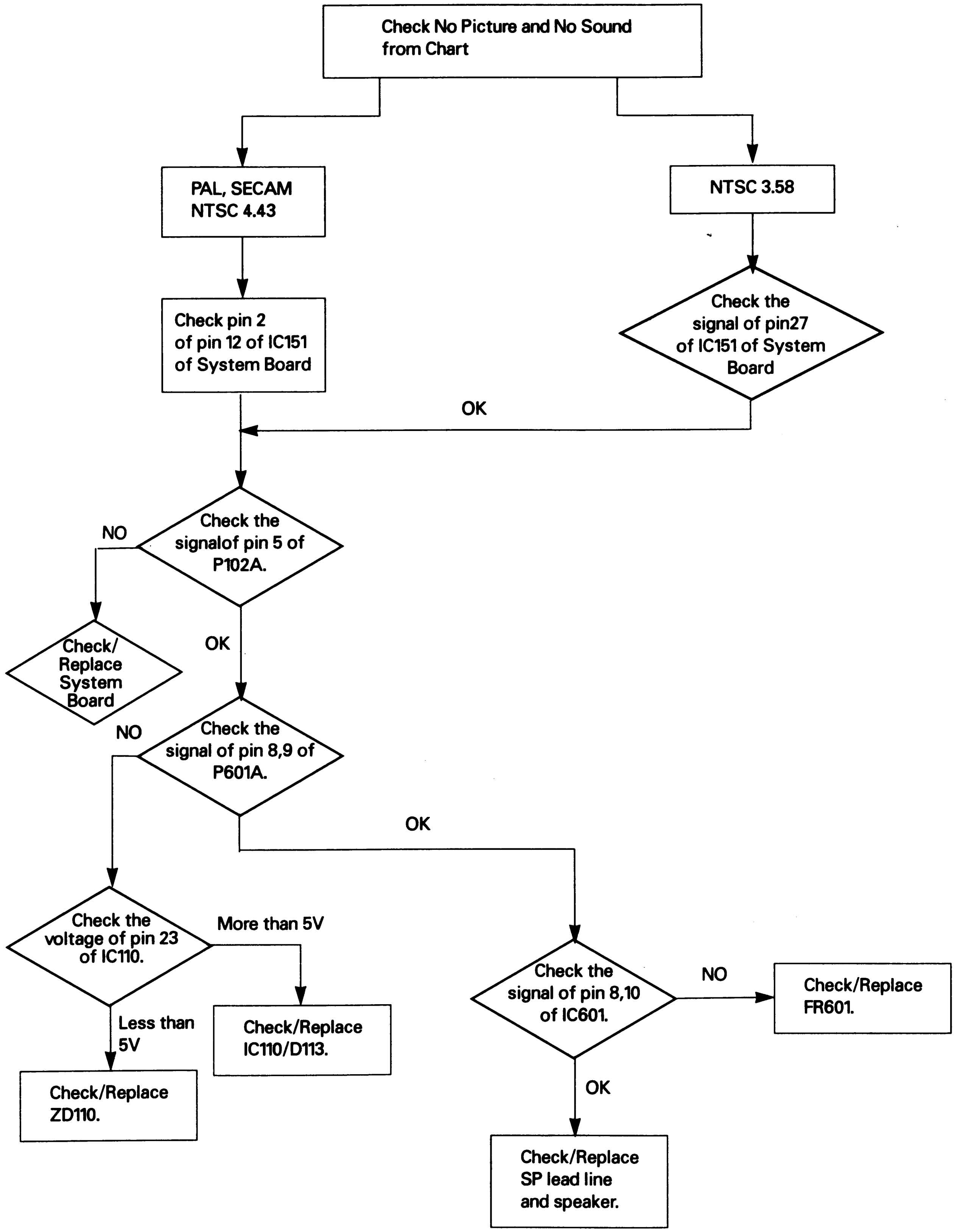

Check the auto search operation.
NO
OK
Check VT (Tuner VT terminal) voltage in A/S (0-33V)
NO
Check/Replace Q13,ZD3 and D10.
OK
Does the voltage of VL, VH, UHF of Tuner normal in A/S?
NO
Check/Replace Q4-Q9.
OK
Does the signal of the pin 1 of P101 is normal?
OK
Refer to the condition of No Sound
Refer to the condition of No Picture
NO
Check IF Board. (Readjust and check/Replace IC110)

Tuner	V_L	V_H	U
V_L	0	0	12
V_H	0	12	0
UHF	12	0	0

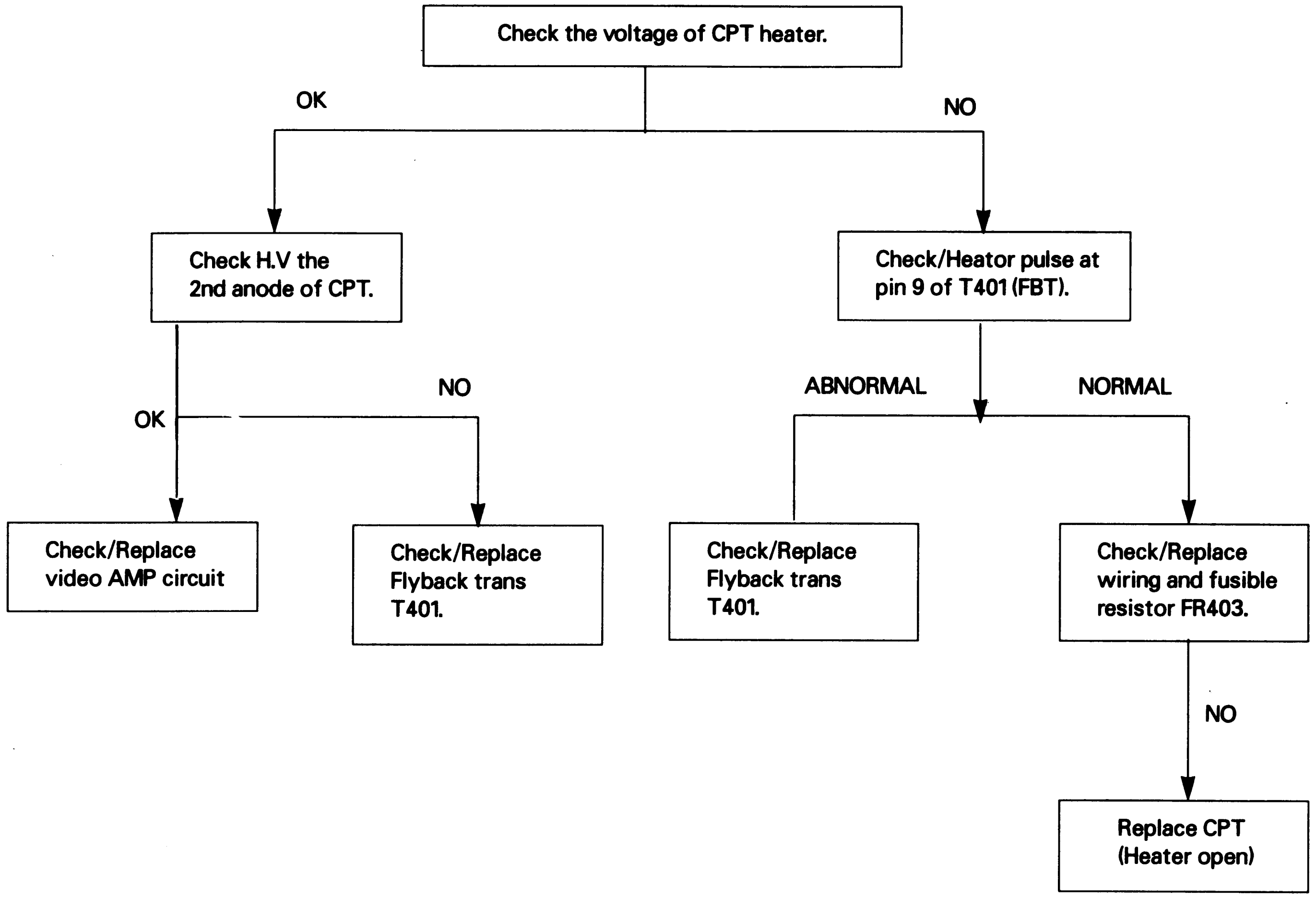
3. NO PICTURE


Does the CVBS of the pin 1 of P101 is normal?
OK
Does the CVBS of the pin 9 of P103 is normal?
NO
Check SYS Board
OK
Does the Y-Signal of the pin 7 of P202 is normal?
NO
Check A/V Board
OK
Does the signal of pin 41,42 and 43 of IC501 is normal?
NO
Check the voltage of pin 55 of IC501 is more than 0.7V.
NO
Check SW302 Q505
OK
Check/Change IC501.
OK
Check CPT Board and FBT

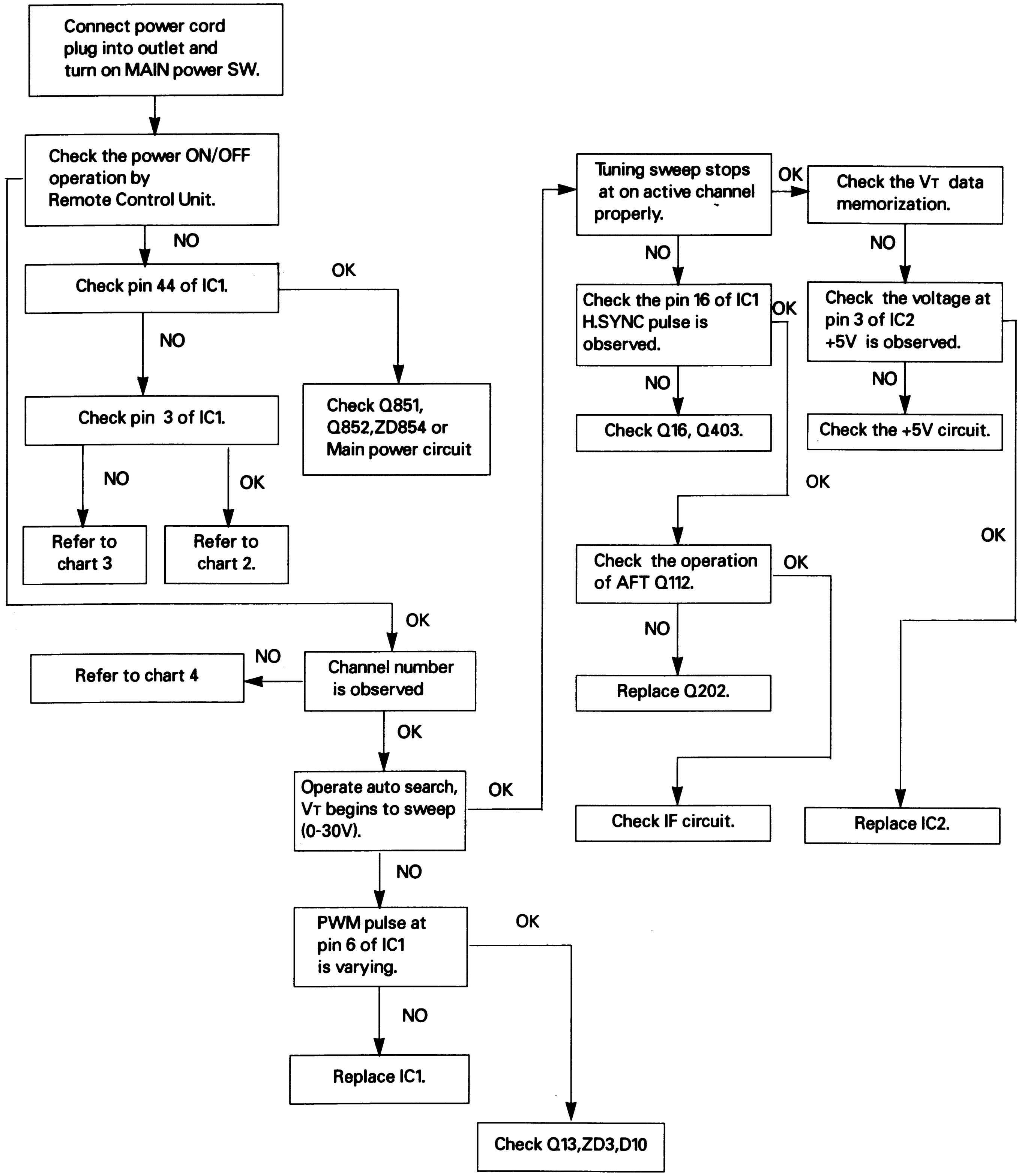
4. NO SOUND


Check No Picture and No Sound from Chart
PAL, SECAM NTSC 4.43
NTSC 3.58
Check pin 2 of pin 12 of IC151 of System Board
Check the signal of pin27 of IC151 of System Board
OK
Check the signalof pin 5 of P102A.
NO
Check/ Replace System Board
OK
Check the signal of pin 8,9 of P601A.
NO
OK
Check the voltage of pin 23 of IC110.
More than 5V
Less than 5V
Check/Replace ZD110.
Check/Replace IC110/D113.
Check the signal of pin 8,10 of IC601.
NO
Check/Replace FR601.
OK
Check/Replace SP lead line and speaker.

5. NO RASTER (SOUND OK)

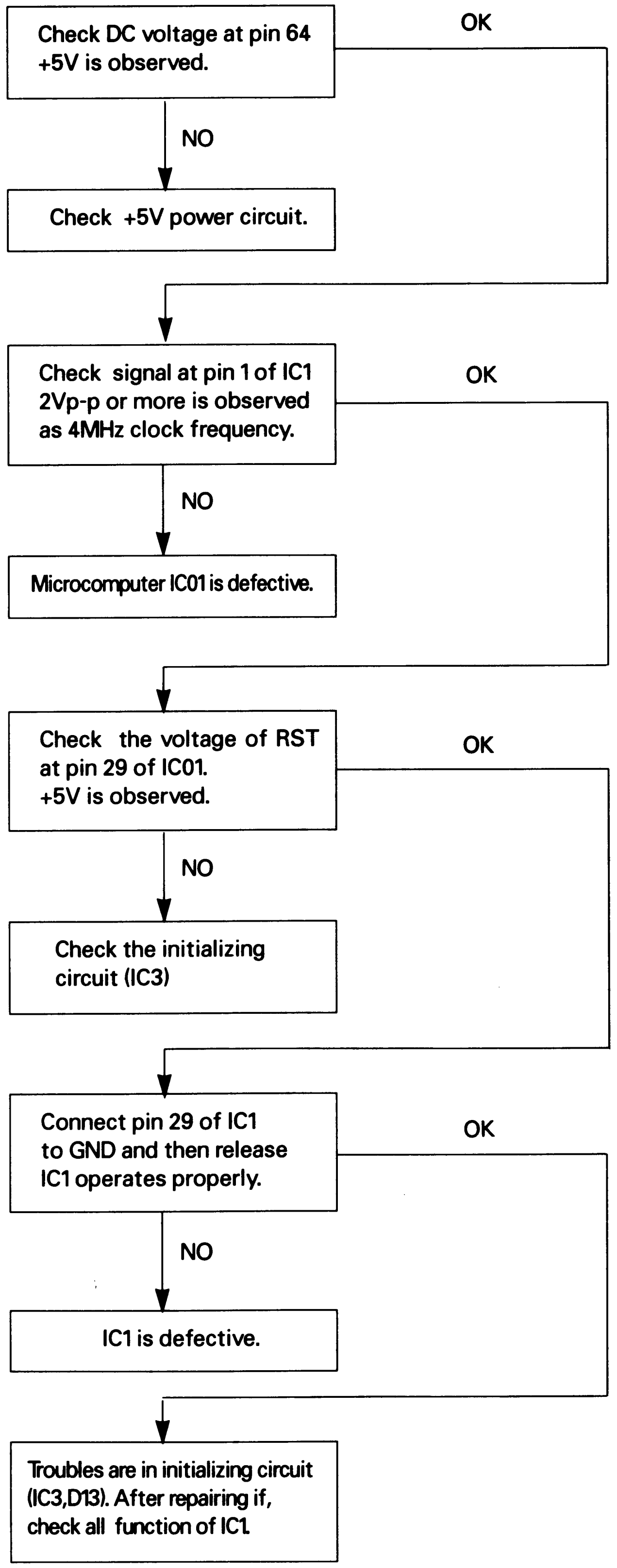

Check the voltage of CPT heater.
OK
NO
Check H.V the 2nd anode of CPT.
Check/Heator pulse at pin 9 of T401 (FBT).
OK
NO
ABNORMAL
NORMAL
Check/Replace video AMP circuit
Check/Replace Flyback trans T401.
Check/Replace Flyback trans T401.
Check/Replace wiring and fusible resistor FR403.
NO
Replace CPT (Heater open)

6. CHANNEL SELECTOR TROUBLE (CHART 1)

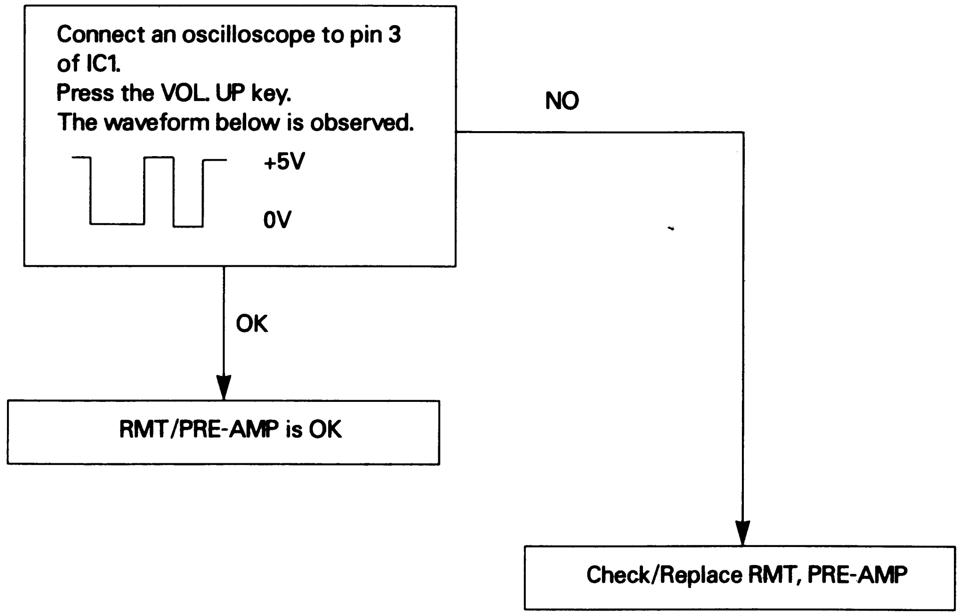

Connect power cord plug into outlet and turn on MAIN power SW.
Check the power ON/OFF operation by Remote Control Unit.
NO
Check pin 44 of IC1.
OK
NO
Check pin 3 of IC1.
Check Q851, Q852,ZD854 or Main power circuit
NO
OK
Refer to chart 3
Refer to chart 2.
OK
NO
Refer to chart 4
Channel number is observed
OK
Operate auto search, VT begins to sweep (0-30V).
OK
NO
PWM pulse at pin 6 of IC1 is varying.
OK
NO
Replace IC1.
Check Q13,ZD3,D10
Tuning sweep stops at on active channel properly.
OK
Check the VT data memorization.
NO
NO
Check the pin 16 of IC1 H.SYNC pulse is observed.
OK
Check the voltage at pin 3 of IC2 +5V is observed.
NO
NO
Check Q16, Q403.
Check the +5V circuit.
OK
OK
Check the operation of AFT Q112.
OK
NO
Replace Q202.
Check IF circuit.
Replace IC2.

Microcomputer (IC01) Operation Check (CHART 2)

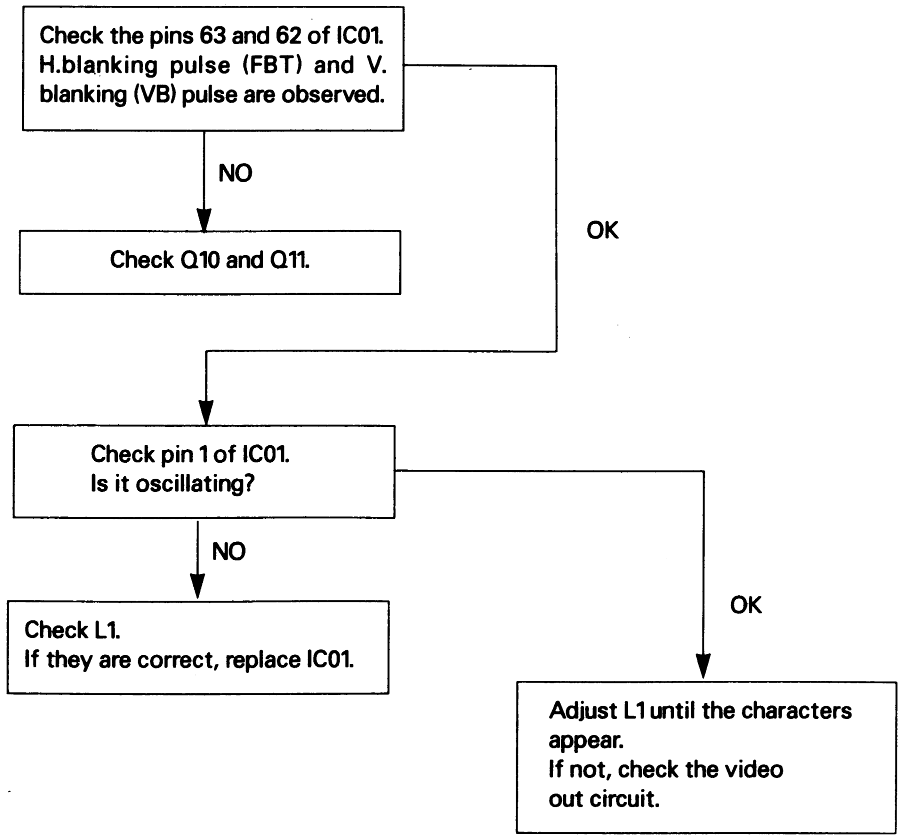
For Checking Microcomputer check that control buttons and their connection work properly.


Check DC voltage at pin 64 +5V is observed.
OK
NO
Check +5V power circuit.
Check signal at pin 1 of IC1 2Vp-p or more is observed as 4MHz clock frequency.
OK
NO
Microcomputer IC01 is defective.
Check the voltage of RST at pin 29 of IC01. +5V is observed.
OK
NO
Check the initializing circuit (IC3)
Connect pin 29 of IC1 to GND and then release IC1 operates properly.
OK
NO
IC1 is defective.
Troubles are in initializing circuit (IC3,D13). After repairing if, check all function of IC1.

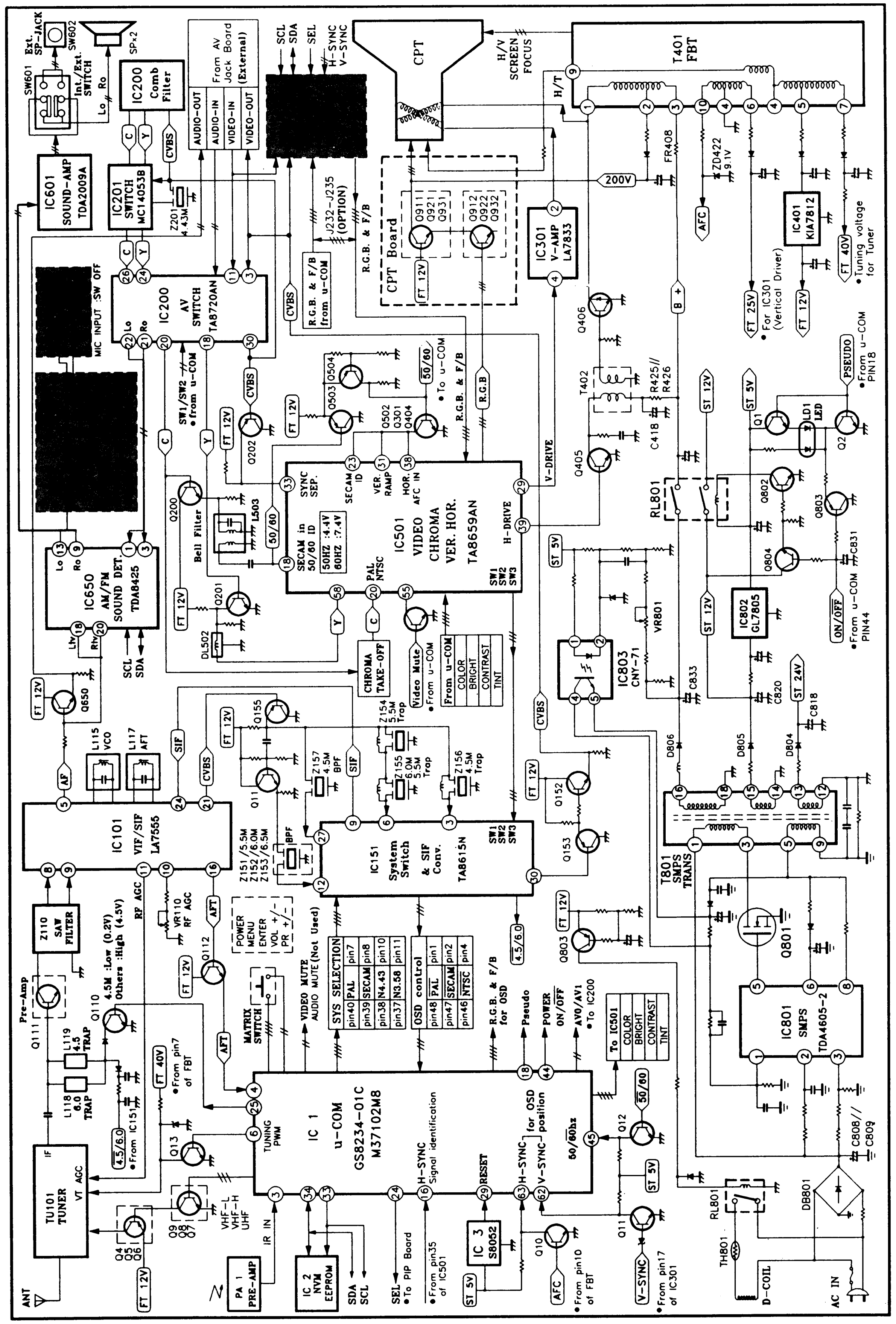
Remote Control Operation Check (CHART 3)
Note: Before checking RMT operation, check that key operation on TV set properly.


Connect an oscilloscope to pin 3 of IC1.
Press the VOL. UP key.
The waveform below is observed.
+5V
0V
NO
OK
RMT/PRE-AMP is OK
Check/Replace RMT, PRE-AMP

(CHART 4)
(1) On Screen Display Operation Check


Check the pins 63 and 62 of IC01. H.blanking pulse (FBT) and V. blanking (VB) pulse are observed.
NO
Check Q10 and Q11.
OK
Check pin 1 of IC01. Is it oscillating?
NO
Check L1. If they are correct, replace IC01.
OK
Adjust L1 until the characters appear. If not, check the video out circuit.

BLOCK DIAGRAM


IC601 SOUND-AMP TDA2009A
IC201 SWITCH MC14053B
IC200 Comb Filter
IC200 AV SWITCH TA8720AN
IC650 AM/FM SOUND DET. TDA8425
IC501 VIDEO CHROMA VER. HOR. TA8659AN
IC101 VIF/SIF LA7555
IC151 System Switch & SIF Conv. TA8615N
IC 1 u-COM GS8234-01C M37102M8
IC 2 NVM EEPROM
IC 3 S8052
PA 1 PRE-AMP
TU101 TUNER
IC301 V-AMP LA7833
IC401 KIA7812
IC802 GL7805
IC803 CNY-71
IC801 SMPS TDA4605-2
T801 SMPS TRANS.
T401 FBT
CPT
CPT Board
RL801
DB801
D-COIL
AC IN
ANT

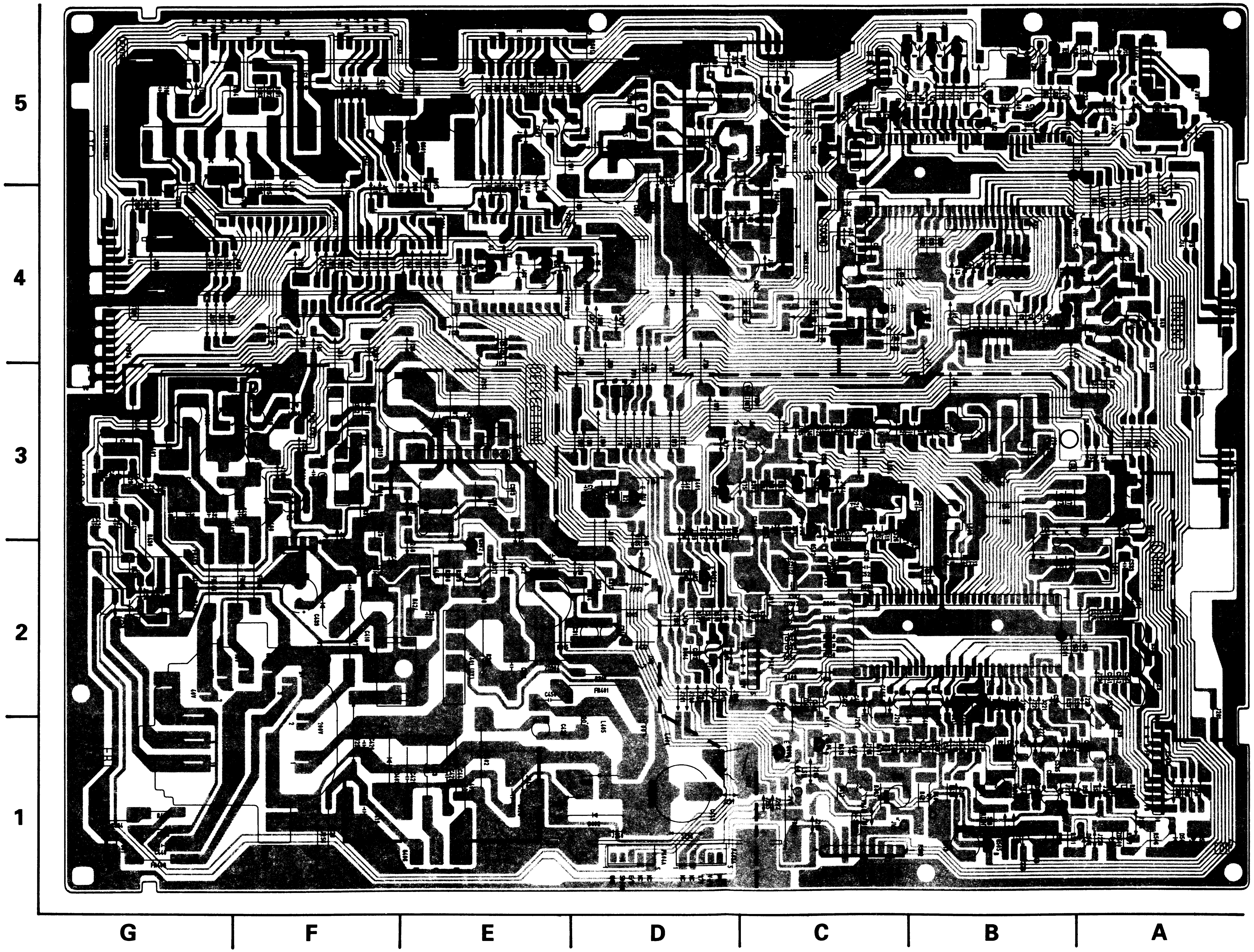
COMPONENT LOCATION GUIDE

(Refer to page 23)

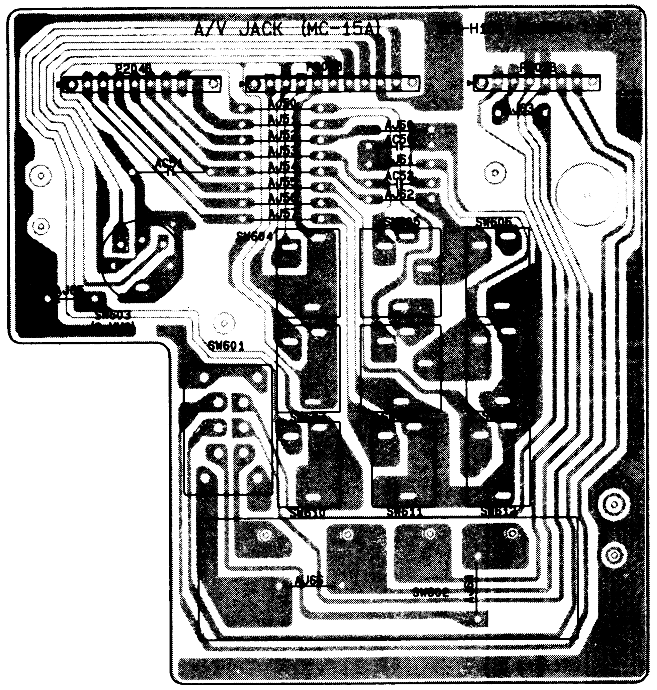
C3	A5
C4	A5
C5	A4
C6	B4
C7	B4
C8	B4
C9	B4
C10	B4
C11	D3
C12	C4
C13	B4
C14	A5
C15	B5
C16	B5
C17	B5
C18	A4
C19	B5
C20	C5
C60	C5
C61	C5
C62	C4
C63	C5
C101	F5
C102	G5
C103	F5
C104	G5
C105	G5
C106	G5
C107	G4
C108	F5
C109	F5
C301	C3
C302	C2
C303	E3
C304	E3
C305	E3
C306	E3
C307	E3
C308	E2
C309	E3
C310	D2
C311	D2
C312	E2
C313	E2
C314	E2
C317	E2
C401	D3
C402	D2
C403	D2
C404	C1
C405	C2
C406	C2
C407	C1
C408	C2
C409	C2
C410	D2
C411	D2
C412	B2
C413	B1
C415	F2
C416	F2
C418	F2
C419	F1
C420	F1
C421	E1
C422	E1
C423	E1
C424	D1
C425	E2
C426	G3
C427	G3
C428	G3
C429	F3
C430	G3
C431	G3
C432	G3
C433	F3
C434	G3
C435	G3
C436	G3
C437	G3
C438	F2
C439	F2
C440	G1
C441	F3
C442	C2
C444	E2
C445	D1
C450	E2
C500	A2
C501	A2
C502	A2
C503	B2
C504	A3
C505	B3
C506	A3
C507	B3
C508	B3
C509	B3
C510	C3
C511	C3
C512	C3
C513	B2
C514	B2
C515	C3
C516	C3
C517	B3
C518	B3
C519	C3
C520	C3
C521	C3
C522	C2
C523	C3
C525	C2
C526	C2
C528	C2
C529	A1
C530	B2
C531	A1
C532	B1
C533	A2
C534	A1
C535	B1
C536	A2
C537	B1
C538	B2
C539	B1
C540	B1
C541	A2
C542	A2
C543	B1
C544	A2
C545	B2
C546	B2
C547	C2
C548	C2
C549	C2
C550	C2
C555	C1
C556	C2
C601	D5
C602	D4
C603	D5
C605	D5
C606	D5
C607	E5
C608	D5
C609	E5
C610	E5
C611	C5
C613	F5
C620	D5
D2	B4
D3	B4
D4	B4
D5	B4
D6	B4
D7	B4
D8	B4
D9	B4
D11	A4
D12	A4
D13	A5
D108	E4
D109	E4
D301	E3
D401	B1
D402	E1
D403	F2
D404	G3
D405	G3
D406	G2
D407	G3
D408	F3
D409	G3
D410	F2
D411	F3
D412	F3
D500	A1
D501	B1
D505	A1
D506	B1
D508	B1
D604	E5
D605	D5
D606	D5
DL501	B3
DL502	A2
FR401	D2
FR402	E2
FR403	G2
FR404	F2
FR405	F2
FR406	G2
FR407	F2
FR408	G1
FR601	C1
IC1	B5
IC2	C4
IC3	C5
IC4	B2
IC301	E3
IC401	F3
IC501	B2
IC601	D5
L1	A5
L101	F5
L401	B1
L402	E1
L403	E1
L404	D1
L405	D2
L406	F3
L407	G3
L451	C1
L500	A2
L501	B3
L502	B3
L503	B3
L504	C3
L506	A1
L511	C1
L512	B3
P401	E2
P402	F3
P501	C2
P502	C1
P604	C5
P605	C4
P801	G1
P01A	A3
P02A	A4
P101A	G5
P102A	F5
P103A	F4
P104A	E4
P1A	C5
P201A	G4
P202A	F4
P203A	E4
P204A	G4
P205A	G3
P403A	D1
P404A	D1
P405A	A5
P503A	A1
P601A	E5
P603A	C4
PA1	A2
Q4	E4
Q5	E4
Q6	D4
Q7	C5
Q8	B5
Q9	B5
Q10	B4
Q11	D3
Q12	B4
Q13	B5
Q16	C5
Q301	D3
Q302	E3
Q402	D2
Q403	C1
Q404	C1
Q405	E2
Q502	C3
Q503	C3
Q504	C3
Q505	B1
Q601	E5
Q603	F5
R5	A5
R6	B5
R7	A5
R9	E4
R10	E4
R11	D4
R12	C4
R13	C4
R14	C4
R15	B4
R16	B4
R17	D3
R18	B4
R19	D3
R20	D3
R21	D3
R22	A3
R23	A3
R24	A3
R25	B4
R26	B4
R27	B4
R28	B4
R29	A2
R30	B4
R31	B4
R32	B4
R33	C4
R34	C4
R35	C4
R36	C4
R37	C4
R38	A5
R39	B5
R40	B5
R41	B5
R42	B5
R43	A5
R44	A4
R45	A4
R46	A4
R47	A4
R48	A4
R49	A4
R50	A4
R51	A4
R54	A5
R55	A5
R60	C5
R101	F5
R102	F5
R103	F5
R104	G5
R105	F5
R106	F5
R151	G5
R301	D3
R302	D3
R303	C3
R304	C2
R305	D2
R306	C2
R307	E3
R308	E2
R309	E2
R310	F3
R311	F3
R312	F3
R313	D2
R314	D2
R315	D2
R316	D2
R317	E2
R318	E2
R319	F3
R320	D3
R321	F3
R322	F3
R401	D3
R402	D2
R404	D2
R405	C1
R406	C1
R407	C1
R408	C2
R409	C2
R410	D2
R411	C2
R412	C1
R413	C1
R414	D2
R415	D3
R420	B1
R421	B1
R422	D2
R423	F3
R424	E2
R425	G2
R426	G2
R428	F1
R429	G3
R430	G3
R431	G3
R432	G2
R433	G2
R434	G1
R435	G1
R436	G1
R437	G3
R438	B1
R440	G3
R470	B2
R501	B1
R502	B1
R506	A1
R507	A1
R510	C3
R511	C3
R512	C3
R513	C3
R514	A2
R515	A2
R516	B2
R517	B3
R518	B3
R519	B3
R520	B3
R521	C3
R522	C3
R523	B2
R524	C3
R525	C3
R526	C3
R527	C3
R528	B2
R529	C3
R530	C3
R532	C2
R533	C3
R534	C2
R536	B2
R537	B2
R538	A2
R539	A2
R540	A1
R541	B1
R542	A1
R544	B2
R546	B1
R547	B1
R548	C2
R549	C2
R550	C2
R560	B1
R601	D4
R603	D5
R604	D4
R606	D5
R609	E5
R610	D5
R612	E5
R613	E5
R615	E5
R616	F5
R617	F5
R618	D5
R619	D5
RA1	B4
RA2	B5
RA3	C4
SW301	F3
SW302	F3
T402	E2
TU101	F5
VR301	C3
VR401	C1
VR501	B3
VR503	B1
X1	C5
X401	C1
X501	C3
X502	C2
ZD3	B5
ZD4	A4
ZD5	A4
ZD301	C2
ZD302	C2
ZD303	F3
ZD304	E2
ZD305	E3
ZD306	E3
ZD307	E3
ZD401	D2
ZD402	B1
ZD405	G2
ZD406	C2
ZD500	A1
ZD501	A1
ZD502	C3

PRINTED CIRCUIT BOARD

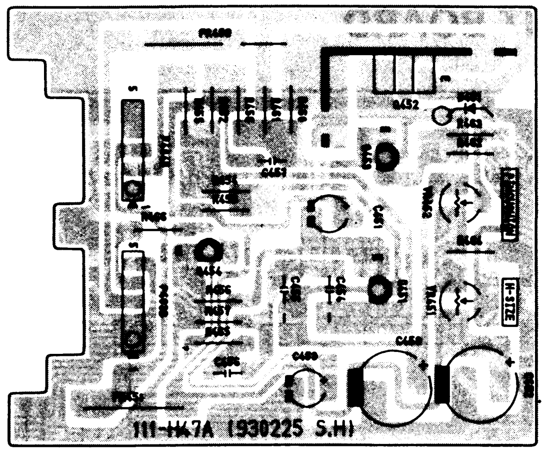
MAIN P.C.BOARD (COMPONENT SIDE)


5
4
3
2
1
G
F
E
D
C
B
A

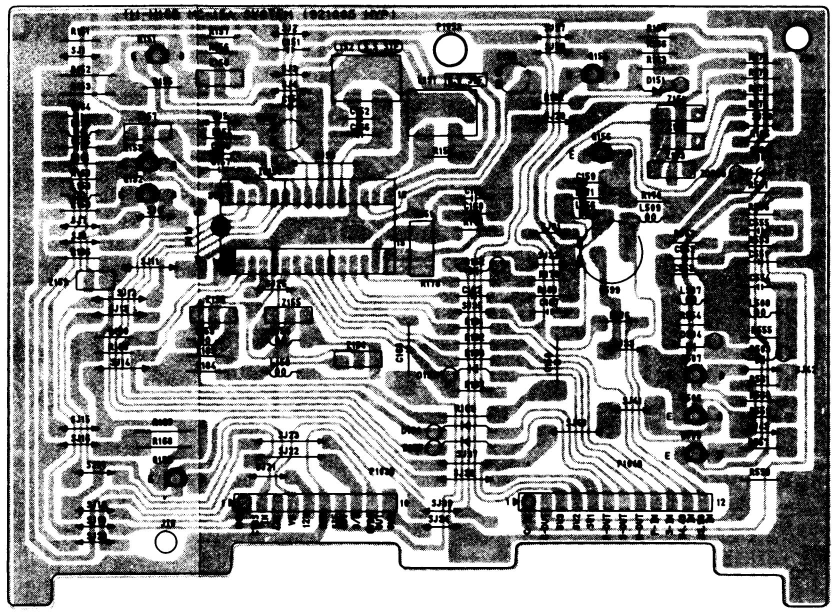
A/V JACK P.C.BOARD (COMPONENT SIDE)


A/V JACK (MC-15A)
SW601
SW610
SW611
SW612

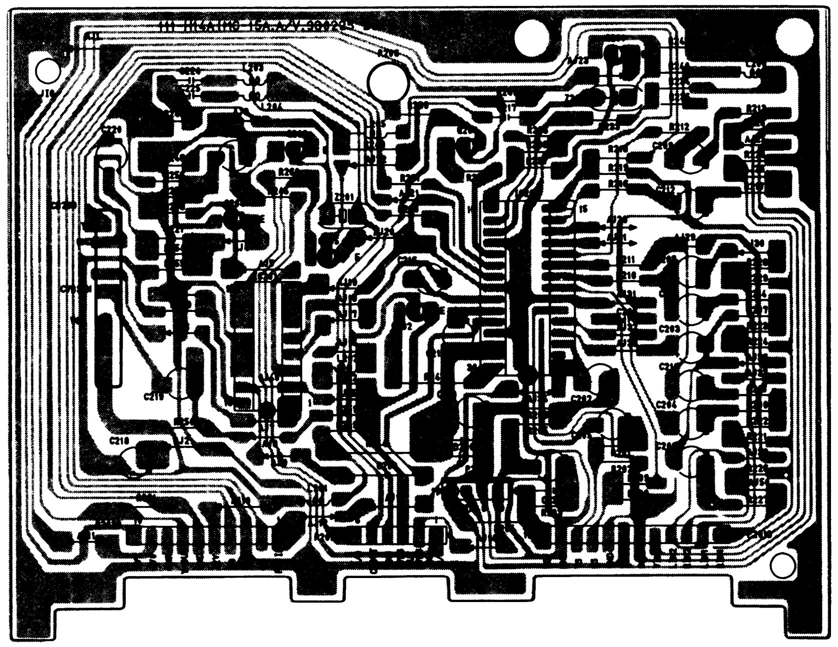
E/W PINCUSHION P.C.BOARD (COMPONENT SIDE)


111-H47A (930225 S.H)

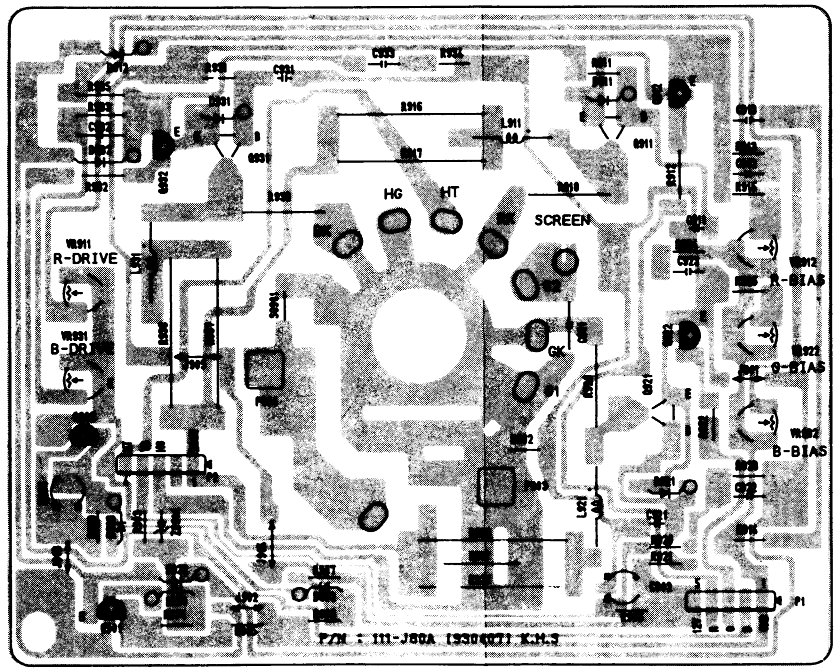
SYSTEM P.C.BOARD (COMPONENT SIDE)



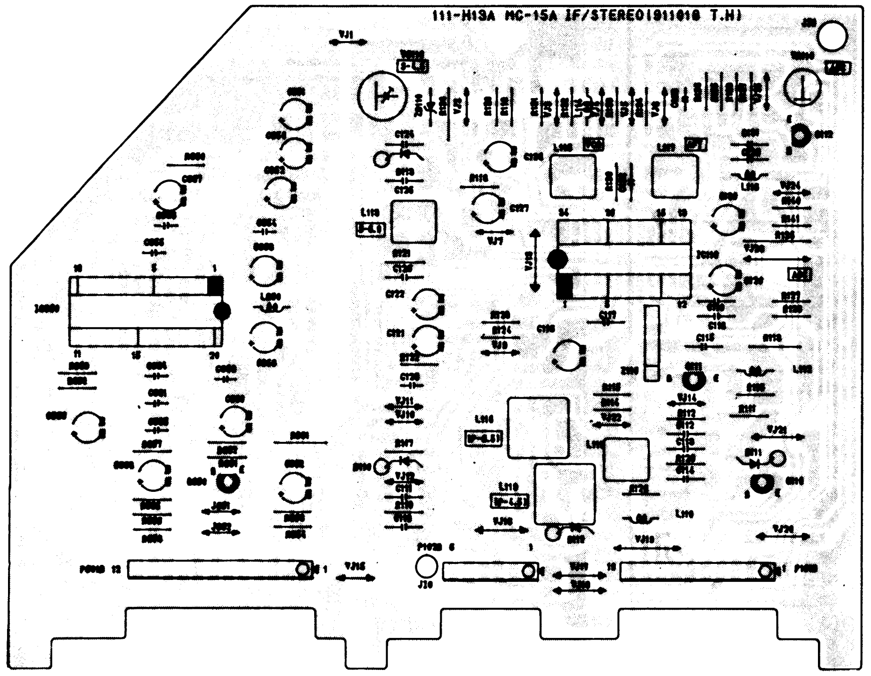
A/V P.C.BOARD (COMPONENT SIDE)



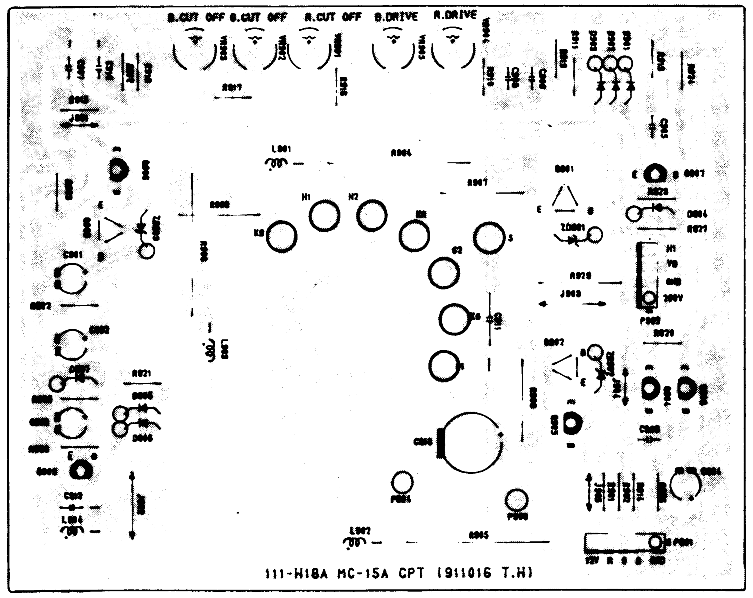
CPT P. C. BOARD (COMPONENT SIDE) (FOR FUJIAN)


R-DRIVE
B-DRIVE
HG
HT
SCREEN
R-BIAS
G-BIAS
B-BIAS
P/N : 111-J80A (930607) K.M.S

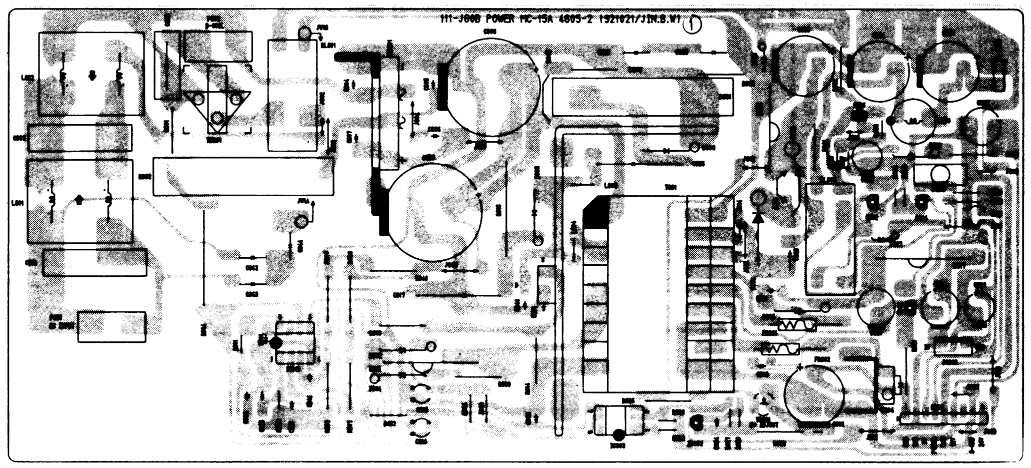
IF/STEREO P.C.BOARD (COMPONENT SIDE)


111-H13A MC-15A IF/STEREO(911016 T.H)

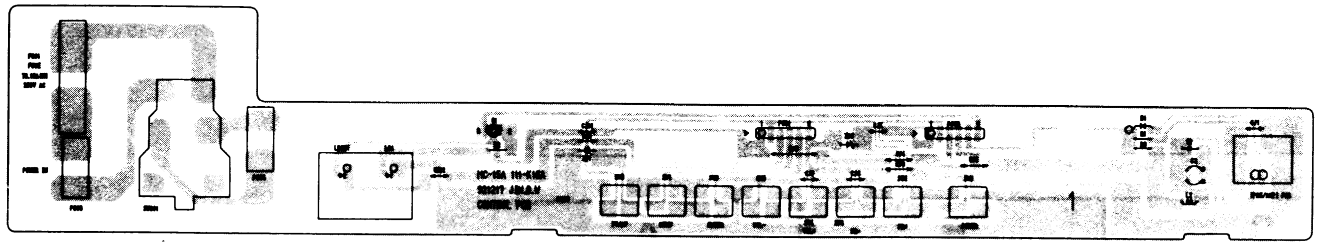
CPT P.C.BOARD (COMPONENT SIDE)


B.CUT OFF
G.CUT OFF
R.CUT OFF
B.DRIVE
R.DRIVE
111-H18A MC-15A CPT (911016 T.H)

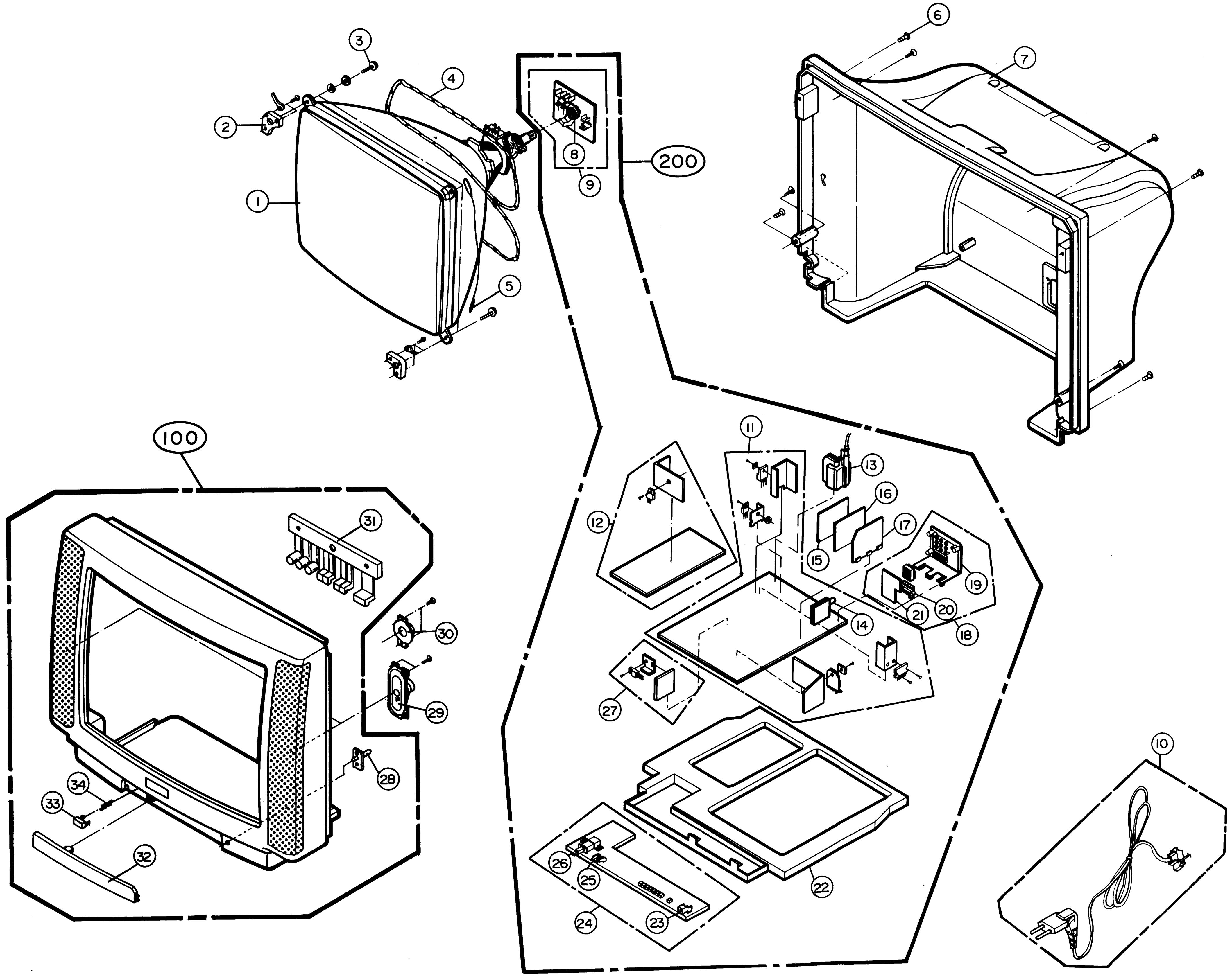
POWER P.C.BOARD (COMPONENT SIDE)

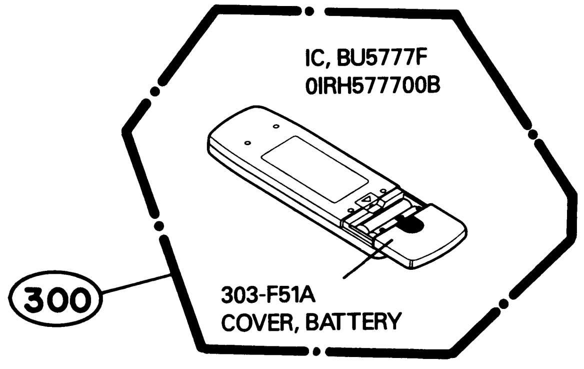


CONTROL P.C BOARD (COMPONENT SIDE)



EXPLODED VIEW





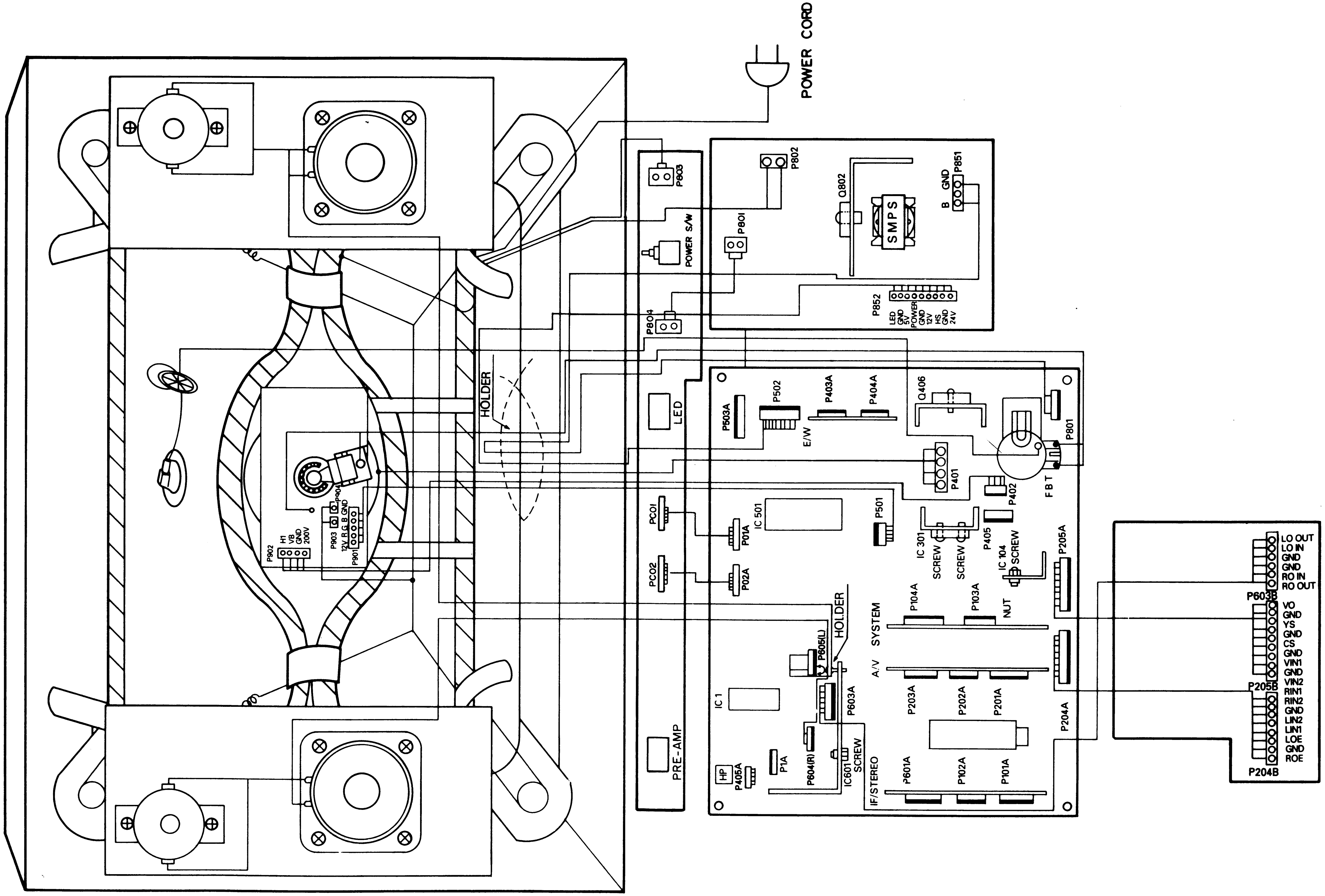
The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

NO.	DESCRIPTION	PART NO.
⚠ 1	COLOUR PICTURE TUBE	112-C29B(FOR RAZNO)
		112-C29D(FOR ABBAR, SEL-VT)
		112-C29E(FOR YUNKANG, TAISTAR, FUJIAN)
2	FIXER, CPT	342-093A
3	SCREW	332-229A
⚠ 4	COIL, DEGAUSSING	150-822E
⚠ 5	LEAD SET, CPT EARTH	170-797R
6	SCREW	1PTF0403116
7	COVER ASSEMBLY, BACK	303-F77E(FOR ABBAR)
		303-F77P(FOR YUNKANG, RAZNO)
		303-F77H(FOR TAISTAR)
		303-F77G(FOR FUJIAN, SEL-VT)
8	SOCKET, CPT	381-226D
9	PCB ASSEMBLY, CPT	110-Y14E
10	CORD ASSY, POWER	110-Y14A(FOR FUJIAN)
11	PCB ASSY, SMPS	174-199W
12	FLYBACK TRANSFORMER	110-V93K
⚠ 13	TUNER	110-V93D
14	PCB ASSY, SYSTEM	154-179Q
15	PCB ASSY, A/V	113-207B
16	PCB ASSY, IF/STEREO	110-V75A
17	BOARD ASSY, A/V ANT	110-V76A
18	PLATE, A/V BOARD	110-V74A
19	PLATE, CONTROL DECO	401-713A
20	PCB ASSY, A/V JACK	407-M31A
21	FRAME, MAIN	407-M32B
22	FRAME, MAIN	110-S75A
23	PRE-AMP	312-380A
24	PCB ASSY, CONTROL	106-048A
25	HOLDER, LED	110-W91A
⚠ 26	SWITCH, MAIN	341-755A
27	PCB ASSY, E/W	140-289B
28	WINDOW, PRE-AMP	110-V77D
29	SPEAKER, SQUAKWER	316-381A
30	SPEAKER, TWEETER	120-C76D
31	BUTTON, CONTROL & POWER	441-279B
32	DOOR ASSY, CONTROL	315-606A
		315-606D(FOR FUJIAN)
33	BUTTON, POWER	441-228A
34	SPRING, COIL	320-062H

SUB ASSY

100	CABINET ASSY	300-B41H(FOR SEL-VT)
		300-A26F
		300-A26R(FOR FUJIAN)
200	CHASSIS ASSY, AMIN	309-999M
		309-A56R(FOR FUJIAN)
300	TRANSMITTER	105-198C

WIRING DIAGRAM


POWER CORD
P803
POWER S/W
P804
LED
PRE-AMP
P802
P801
Q802
SMPS
B GND
P851
P852
LED
GND
5V
POWER
GND
12V
HS
GND
24V
HOLDER
P503A
P502
E/W
P403A
P404A
Q406
P801
P401
P402
FBT
PC01
PC02
P01A
P02A
IC 501
P501
IC 301
SCREW
SCREW
P405
IC 104
SCREW
NUT
P205A
P104A
P103A
SYSTEM
A/V
HOLDER
P605(L)
P603A
IC 1
P203A
P202A
P201A
P204A
HP
P405A
P1A
P604(R)
IC601
SCREW
IF/STEREO
P601A
P102A
P101A
P902
H1
VB
GND
200V
P903
P904
12V R G B GND
P901
P603B
LO OUT
LO IN
GND
GND
RO IN
RO OUT
P205B
VO
GND
YS
GND
CS
GND
VIN1
GND
VIN2
RIN1
RIN2
GND
LIN2
LIN1
LOE
GND
ROE
P204B

REPLACEMENT PARTS LIST

SAFETY PARTS LIST OF MC-15A CHASSIS ⚠

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed without being noticed by a visual inspection and the X-RAY RADIATION protection afforded by some of them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified by ⚠ marks on the circuit diagram. Before replacing any these components, read the specification of the part carefully. The use of substitute replacement parts which do not have the same characteristics as specified in this parts list may create X-RAY RADIATION.

LOCA. NO	DESCRIPTION
C423	CAPACITOR
C801	CAPACITOR
C802	CAPACITOR
C821	CAPACITOR
C827	CAPACITOR
C870	CAPACITOR
D402	DIODE
D403	DIODE
F801	FUSE
FR401	RESISTOR, FIX METAL FILM OXIDE
FR402	RESISTOR, FUSIBLE
FR403	RESISTOR, FUSIBLE
FR404	RESISTOR, FUSIBLE
FR405	RESISTOR, FIX METAL FILM OXIDE
FR406	RESISTOR, FUSIBLE
FR407	RESISTOR, FUSIBLE
FR408	RESISTOR, FUSIBLE
FR853	RESISTOR, FIX METAL FILM OXIDE
FR854	RESISTOR, FUSIBLE
L801	COIL
L802	COIL
R823	RESISTOR
R830	RESISTOR
RL802	RELAY
SW801	SWITCH
T401	FBT
T801	TRANSFORMER
T802	TRANSFORMER
	POWER SWITCH
	COLOR PICTURE TUBE (CPT)
	COIL, DEGAUSSING
	DEFLECTION YOKE (DY)

[redacted]

「REPLACEMENT PARTS LIST」 PAGE : 1

MODEL : CF-29C10

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
	R		0CE3366F618	CAPACITOR.ELECTROLYTIC	33MF SMS 16V M FM5 TP5	
	R		0IRH577700B	IC.ROHM	BU5777F(GSR288-01A)R-K(BU2418)	
			1PRF0302616	SCREW.BRAIZER HD TAP TITE +	"P" TYPE D3 L10 MSWR3/BK	
			1PRF0302816	SCREW.BRAIZER HD TAP TITE +	D3 L12 MSWR3/BK	
			1PTF0403016	SCREW.TRUSS HEAD TAP TITE +	"P" TYPE D4 L14 MSWR3/BK	
			1PTF0403116	SCREW.TRUSS HEAD TAP TITE +	"P" TYPE D4 L16 MSWR3/BK	
			105-198C	.TRANSMITTER	ASSY (MC-15A)	
			110-S75A	PCB ASSY	A/V JACK(S-VHS)	
			110-V73K	PCB ASSY	MAIN 29C10 FULL M-INSERT	
			110-V74A	PCB ASSY	IF/STREO(A/V STREO)	
			110-V75A	PCB ASSY	SYSTEM(MULTI)	
			110-V76A	PCB ASSY	A/V(W/COMB)	
			110-V77D	PCB ASSY	E/W(PINCUSHION) M-INSERT	
			110-W91A	PCB ASSY	CONTROL(MC-15A.CF-25C10)A/I	
			120-C76D	SPEAKER	TWEETER(4OHM)	
			120-C77D	SPEAKER	SQUAKWER(4OHM)	
			122-170B	SPEAKER ASSY	SQUAKER+TWEETER(4OHM.12W)	
			150-822E	COIL	DEGAUSSING 29" RCA	
	R		166-015H	FILTER	KBR503.5A1	
			170-797R	LEAD SET	CPT EARTH (INCH 29.CNR-2990AI)	NSP
			174-179C	CORD	POWER W/FILTER(SANG NONG)	
			174-199W	CORD	ASSY.POWER(179C.L=300.242F)	
			181-444G	C.METALPOLYESTER	0.15MF 50V (TR)	
			303-F92A	COVER	BATTERY(105-198)	
			305-002D	HOUSING	2P AMP 171157-1 (10)	
			312-380A	FRAME	M/CHA.(25C10.MC15A)	
			314-258B	GRILL	SPEAKER (R.7091 SPRAY)	
			314-259B	GRILL	SPEAKER (L.7091 SPRAY)	
			316-381A	WINDOW	PRE-AMP CN-21B10/2	
			320-062H	SPRING	COIL	
			332-229A	SCREW	ASSY.HEXAGON HEAD SPECIAL	
			341-184D	HOLDER	LEAD TWISTER	
			341-242F	HOLDER	POWER CORD	
			341-574A	HOLDER	ANODE LEAD	
			342-093A	FIXER	CPT	
			343-A36A	SUPPORTER	25"FBT(NC17A)	
			343-A63A	SUPPORTER	EWB MC-15A	
			343-A77A	SUPPORTER	SYS/IF/AV(MC15A)	

「REPLACEMENT PARTS LIST」 PAGE : 2

MODEL : CF-29C10

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
			381-197A	SOCKET	ADAPTER	
			387-651A	CONNECTOR ASSY	DY(NC-96A)	
			387-839J	CONNECTOR	ASSY.3P (IL-6)	
			401-713A	BOARD	ASSY.A/V ANT(CFT-2590)	
			407-N33F	PLATE	CONT.DECO(CF-25C10)	
			410-585A	MARK	BRAND GS(FORGING.25"-29")	
			441-228A	BUTTON	POWER (2590)	
			441-245A	BUTTON	POWER (CFT-2590)	
			441-279B	BUTTON	POWER&CONTROL	
			450-018C	ADAPTER	ANT.(300 TO 75) PAL	
			470-861A	LOCK	ASSY.DOOR KIFCO	
		BD801	0DD606000AA	DIODE	RBV606.SANKEN	
		CB200	166-272A	FILTER	COMB (UGL-316KNT.SHOWA)	
		C1	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C10	0CN2210K519	CAPACITOR TUBULA(HIGH DIELE)	220PF 50V K·B TA52	
		C101	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C102	0CE1066K618	CAPACITOR.ELECTROLYTIC	10MF SMS 50V M FM5 TP5	
		C103	0CE4756F618	CAPACITOR.ELECTROLYTIC	4.7U SMS 16V M FL TP(5)	
		C104	0CE4756F618	CAPACITOR.ELECTROLYTIC	4.7U SMS 16V M FL TP(5)	
		C105	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C106	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C107	0CN3310K519	CAPACITOR TUBULA(HIGH DIELE)	330P 50V K B TA52	
		C108	0CN1040K949	CAPACITOR TUBULA(HIGH DIELE)	0.1M 50V Z F TA52	
		C109	0CN1040K949	CAPACITOR TUBULA(HIGH DIELE)	0.1M 50V Z F TA52	
		C110	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C111	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C112	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C115	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C116	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C117	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C118	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C119	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C12	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C120	0CE2246K618	CAPACITOR.ELECTROLYTIC	0.22M SMS 50V M FM5 TP5	
		C121	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C122	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C123	0CQ1531N509	CAPACITOR POLYESTER(MYLAR)	0.015MF 100V K POLY TP	
		C124	0CX5100K409	CAPACITOR TUBULA(T.C)	51P 50V J SL TA52	
		C125	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C126	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C127	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C128	181-064T	C.ELECTROLYTIC	0.47MF 50V TR	
		C129	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C13	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C130	0CE4766F618	CAPACITOR.ELECTROLYTIC	47MF SMS 16V M FM5 TP5	
		C131	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C132	0CX2000K419	CAPACITOR TUBULA(T.C)	20P 50V J C TA52	
		C133	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C14	0CN2210K519	CAPACITOR TUBULA(HIGH DIELE)	220PF 50V K B TA52	

「REPLACEMENT PARTS LIST」 PAGE : 3

MODEL : CF-29C10

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C15	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C151	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C152	0CX2200K409	CAPACITOR TUBULA(T.C)	22PF 50V J SL TA52	
		C153	0CE4766F618	CAPACITOR.ELECTROLYTIC	47MF SMS 16V M FM5 TP5	
		C154	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C155	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C156	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C157	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C158	0CX4700K409	CAPACITOR TUBULA(T.C)	47PF 50V J SL TA52	
		C159	0CX4700K409	CAPACITOR TUBULA(T.C)	47PF 50V J SL TA52	
		C16	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C160	0CN4710K519	CAPACITOR TUBULA(HIGH DIELE)	470PF 50V K B TA52	
		C161	0CN4710K519	CAPACITOR TUBULA(HIGH DIELE)	470PF 50V K B TA52	
		C162	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C163	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C164	0CX4700K409	CAPACITOR TUBULA(T.C)	47PF 50V J SL TA52	
		C165	0CX4700K409	CAPACITOR TUBULA(T.C)	47PF 50V J SL TA52	
		C166	0CN8200K519	CAPACITOR TUBULA(HIGH DIELE)	82P 50V K B TA52	
		C17	0CE4756K618	CAPACITOR.ELECTROLYTIC	4.7MF SMS 50V M FM5 TP5	
		C18	0CE1066K618	CAPACITOR.ELECTROLYTIC	10MF SMS 50V M FM5 TP5	
		C19	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C2	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C20	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C200	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C201	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C202	0CE4766F618	CAPACITOR.ELECTROLYTIC	47MF SMS 16V M FM5 TP5	
		C203	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C204	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C205	0CE4766F618	CAPACITOR.ELECTROLYTIC	47MF SMS 16V M FM5 TP5	
		C206	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C209	0CE4766F618	CAPACITOR.ELECTROLYTIC	47MF SMS 16V M FM5 TP5	
		C210	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C211	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C213	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C214	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C215	0CE1046K618	CAPACITOR.ELECTROLYTIC	0.1U SMS 50V M FM5 TP5	
		C216	0CE4766F618	CAPACITOR.ELECTROLYTIC	47MF SMS 16V M FM5 TP5	
		C218	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C219	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C220	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C221	0CX6200K409	CAPACITOR TUBULA(T.C)	62PF 50V J S TA52	
		C222	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C223	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C230	0CN6810K519	CAPACITOR TUBULA(HIGH DIELE)	680P 50V K B TA52	
		C3	0CE4766F618	CAPACITOR.ELECTROLYTIC	47MF SMS 16V M FM5 TP5	
		C301	181-444S	CAPACITOR	MPE.ECQ-V1H105JZ3(TR)	
		C302	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C303	0CX4700K409	CAPACITOR TUBULA(T.C)	47PF 50V J SL TA52	
		C304	0CQ1021N509	CAPACITOR POLYESTER(MYLAR)	0.001U 100V K POLY TP	
		C305	0CE2276J618	CAPACITOR.ELECTROLYTIC	220M SMS 35V M FL TP(5)	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C306	0CN3310K519	CAPACITOR TUBULA(HIGH DIELE)	330P 50V K B TA52	
		C307	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C308	0CE4756K618	CAPACITOR.ELECTROLYTIC	4.7MF SMS 50V M FM5 TP5	
		C309	0CE1086J618	CAPACITOR.ELECTROLYTIC	1000M SMS 35V M FL	
		C310	181-0321	CAPACITOR.TANTAL	1.0MF 25V K TAPING	
		C311	181-0321	CAPACITOR.TANTAL	1.0MF 25V K TAPING	
		C312	0CE2286H61A	CAPACITOR.ELECTROLYTIC	2200M SMS 25V M TP7.5	
		C313	0CQ2241N501	CAPACITOR POLYESTER(MYLAR)	0.22MF 100V L POLY TP	
		C317	0CK3320W515	CAPACITOR CERAMIC(HIGH DIELE)	3300P 500V K B TS	
		C4	0CE2256K618	CAPACITOR.ELECTROLYTIC	2.2MF SMS 50V M FM5 TP5	
		C401	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C403	0CN5610K519	CAPACITOR TUBULA(HIGH DIELE)	560P 50V K B TA52	
		C404	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C405	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C406	0CQ1531N519	CAPACITOR POLYESTER(MYLAR)	0.015MF 100V K POLY NI TP	
		C407	0CQ1831N509	CAPACITOR POLYESTER(MYLAR)	0.018U 100V K POLY TP5	
		C408	181-057Z	CAPACITOR.POLYESTER	0.03MF 100V J	
		C409	0CC3010K405	CAPACITOR CERAMIC(TEMP.COMP)	300P 50V J SL TS	
		C410	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C411	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C415	0CN3910K519	CAPACITOR TUBULA(HIGH DIELE)	390P 50V K B TA52	
		C416	0CK3310W515	CAPACITOR CERAMIC(HIGH DIELE)	330P 500V K B TS	
		C418	0CE3366P630	CAPACITOR.ELECTROLYTIC	33U SMS 160V M FM5	
		C421	181-131F	CAPACITOR.METAL POLYPROPYLENE	7300PF J	
		C422	181-131B	CAPACITOR.METALPOLYPROPYLENE	8200PF 1.6KV J	
		C423	181-059C	CAPACITOR	PP 200V 0.039MFK	
		C424	181-128D	CAPACITOR	MPP.0.5MFJ	
		C425	0CE1051P618	CAPACITOR.ELECTROLYTIC	1MF SMS 160V M FM5 TPM	
		C426	0CN1810K519	CAPACITOR TUBULA(HIGH DIELE)	180PF 50V K B TA52	
		C427	0CQ6821N519	CAPACITOR POLYESTER(MYLAR)	0.0068U 100V K POLY NI TP	
		C428	0CK4710W515	CAPACITOR CERAMIC(HIGH DIELE)	470PF 500V K B TS	
		C429	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C430	0CE4766H618	CAPACITOR.ELECTROLYTIC	47M SMS 25V M FL TP(5)	
		C431	0CE4776H618	CAPACITOR.ELECTROLYTIC	470U SMS 25V M FM5 TP(5)	
		C432	0CK2710W515	CAPACITOR CERAMIC(HIGH DIELE)	270P 500V K B TS	
		C433	0CK47101515	CAPACITOR CERAMIC(HIGH DIELE)	470P 1KV K B TS	
		C434	0CE4776K618	CAPACITOR.ELECTROLYTIC	470M SMS 50V M TP5	
		C435	0CE1066N618	CAPACITOR.ELECTROLYTIC	10MF SMS 100V M F5 TP5	
		C436	0CK1220W515	CAPACITOR.CERAMIC(HIGH DIELE)	1200P 500V K B TS	
		C437	0CK47101515	CAPACITOR CERAMIC(HIGH DIELE)	470P 1KV K B TS	
		C438	0CK10201515	CAPACITOR.CERAMIC(HIGH DIELE)	1000P 1KV K B TS	
		C439	0CE2261R618	CAPACITOR.ELECTROLYTIC	22M SM 250V M TP5	
		C440	181-059D	C.POLYPROPYLENE	0.047MF 200V K	
		C441	0CQ1031N509	CAPACITOR POLYESTER(MYLAR)	0.01U 100V K POLY TP	
		C442	181-064S	C.ELECTROLYTIC	3.3MF 16V TR	
		C445	181-020A	CAPACITOR.ELECTROLYTIC	6.8MF 25V M	
		C446	0CE4756K618	CAPACITOR.ELECTROLYTIC	4.7MF SMS 50V M FM5 TP5	
		C450	0CK22201510	CAPACITOR CERAMIC(HIGH DIELE)	2200P 1KV K B S	
		C451	0CE4766K618	CAPACITOR.ELECTROLYTIC	47M SMS 50V M FM5 TP(5)	
		C452	0CE2276J618	CAPACITOR.ELECTROLYTIC	220M SMS 35V M FL TP(5)	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C453	0CE4776F618	CAPACITOR.ELECTROLYTIC	470MF SMS 16V M FM5 TP5	
		C454	181-444E	C.METALPOLYESTER	0.1MF 50V J	
		C455	181-444E	C.METALPOLYESTER	0.1MF 50V J	
		C456	181-444E	C.METALPOLYESTER	0.1MF 50V J	
		C5	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C500	0CN1810K519	CAPACITOR TUBULA(HIGH DIELE)	180PF 50V K B TA52	
		C501	0CN1810K519	CAPACITOR TUBULA(HIGH DIELE)	180PF 50V K B TA52	
		C502	0CN1810K519	CAPACITOR TUBULA(HIGH DIELE)	180PF 50V K B TA52	
		C503	0CX8R20K519	CAPACITOR TUBULA(T.C)	8.2P 50V K C TA52	
		C504	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C505	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C506	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C507	0CX8R20K519	CAPACITOR TUBULA(T.C)	8.2P 50V K C TA52	
		C508	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C509	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C510	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C511	181-064T	C.ELECTROLYTIC	0.47MF 50V TR	
		C512	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C513	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C514	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C515	0CX2700K409	CAPACITOR TUBULA(T.C)	27PF 50V J SL TA52	
		C516	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C517	0CQ2231N519	CAPACITOR POLYESTER(MYLAR)	0.022MF 100V K POLY TP	
		C518	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C519	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C520	0CE2256K618	CAPACITOR.ELECTROLYTIC	2.2MF SMS 50V M FM5 TP5	
		C521	0CQ1031N509	CAPACITOR POLYESTER(MYLAR)	0.01U 100V K POLY TP	
		C522	0CX2700K409	CAPACITOR TUBULA(T.C)	27PF 50V J SL TA52	
		C523	0CX3900K409	CAPACITOR TUBULA(T.C)	39PF 50V J SL TA52	
		C525	181-057Z	CAPACITOR.POLYESTER	0.03MF 100V J	
		C526	0CX3000K409	CAPACITOR TUBULA(T.C)	30P 50V J SL TA52	
		C528	0CX1500K419	CAPACITOR TUBULA(T.C)	15P 50V J C TA52	
		C529	0CN1810K519	CAPACITOR TUBULA(HIGH DIELE)	180PF 50V K B TA52	
		C530	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C531	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C532	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C533	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C534	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C535	0CE2266K618	CAPACITOR.ELECTROLYTIC	22M SMS 50V M FM5 TP(5)	
		C536	0CE1066K618	CAPACITOR.ELECTROLYTIC	10MF SMS 50V M FM5 TP5	
		C537	0CE4746K618	CAPACITOR.ELECTROLYTIC	0.47MF SMS 50V M FM5 TP5	
		C538	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C539	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C540	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C541	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C542	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C543	0CE1066K618	CAPACITOR.ELECTROLYTIC	10MF SMS 50V M FM5 TP5	
		C544	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C545	181-032Z	C.TANTAL	0.22MF 35V K	
		C546	181-032Z	C.TANTAL	0.22MF 35V K	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C547	181-032Z	C.TANTAL	0.22MF 35V K	
		C548	0CN8200K519	CAPACITOR TUBULA(HIGH DIELE)	82P 50V K B TA52	
		C549	0CN8200K519	CAPACITOR TUBULA(HIGH DIELE)	82P 50V K B TA52	
		C550	0CN8200K519	CAPACITOR TUBULA(HIGH DIELE)	82P 50V K B TA52	
		C551	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C552	0CX4700K409	CAPACITOR TUBULA(T.C)	47PF 50V J SL TA52	
		C553	0CX2200K409	CAPACITOR TUBULA(T.C)	22PF 50V J SL TA52	
		C554	0CX2200K409	CAPACITOR TUBULA(T.C)	22PF 50V J SL TA52	
		C555	0CX4700K409	CAPACITOR TUBULA(T.C)	47PF 50V J SL TA52	
		C556	0CX2000K419	CAPACITOR TUBULA(T.C)	20P 50V J C TA52	
		C6	0CN1020K519	CAPACITOR TUBULA(HIGH DIELE)	1000PF 50V K B TA52	
		C60	0CX6200K409	CAPACITOR TUBULA(T.C)	62PF 50V J S TA52	
		C601	0CE1086F618	CAPACITOR.ELECTROLYTIC	1000M SMS 16V M FM(5) TP(5)	
		C602	0CE1086F618	CAPACITOR.ELECTROLYTIC	1000M SMS 16V M FM(5) TP(5)	
		C603	181-444G	C.METALPOLYESTER	0.15MF 50V (TR)	
		C605	0CN1030F679	CAPACITOR TUBULA(HIGH DIELE)	0.01MF 16V M Y TA52	
		C606	0CE1086J618	CAPACITOR.ELECTROLYTIC	1000M SMS 35V M FL	
		C607	0CE2256K618	CAPACITOR.ELECTROLYTIC	2.2MF SMS 50V M FM5 TP5	
		C608	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C609	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C61	0CX6200K409	CAPACITOR TUBULA(T.C)	62PF 50V J S TA52	
		C610	0CE2256K618	CAPACITOR.ELECTROLYTIC	2.2MF SMS 50V M FM5 TP5	
		C611	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C62	0CE4756F618	CAPACITOR.ELECTROLYTIC	4.7U SMS 16V M FL TP(5)	
		C620	181-444G	C.METALPOLYESTER	0.15MF 50V (TR)	
		C650	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C651	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C652	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C653	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C654	0CQ1041N509	CAPACITOR POLYESTER(MYLAR)	0.1MF 100V L POLY TP	
		C655	0CQ3331N509	CAPACITOR POLYESTER(MYLAR)	0.033U 100V K POLY TP	
		C656	0CQ6821N519	CAPACITOR POLYESTER(MYLAR)	0.0068U 100V K POLY NI TP	
		C657	0CE4756F618	CAPACITOR.ELECTROLYTIC	4.7U SMS 16V M FL TP(5)	
		C658	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C659	0CQ1531N509	CAPACITOR POLYESTER(MYLAR)	0.015MF 100V K POLY TP	
		C660	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C661	0CQ1531N509	CAPACITOR POLYESTER(MYLAR)	0.015MF 100V K POLY TP	
		C662	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C663	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C664	0CQ3331N509	CAPACITOR POLYESTER(MYLAR)	0.033U 100V K POLY TP	
		C665	0CQ6821N519	CAPACITOR POLYESTER(MYLAR)	0.0068U 100V K POLY NI TP	
		C666	0CE4756F618	CAPACITOR.ELECTROLYTIC	4.7U SMS 16V M FL TP(5)	
		C7	0CN2210K519	CAPACITOR TUBULA(HIGH DIELE)	220PF 50V K B TA52	
		C8	0CN1010K519	CAPACITOR TUBULA(HIGH DIELE)	100PF 50V K B TA52	
		C801	181-408B	CAPACITOR	0.15UF(ISKRA1531)	
		C802	181-408B	CAPACITOR	0.15UF(ISKRA1531)	
		C803	181-192A	CAPACITOR	KNB1531 0.1MF/250V(ISKRA)	
		C804	0CK10201515	CAPACITOR.CERAMIC(HIGH DIELE)	1000P 1KV K B TS	
		C805	0CK10201515	CAPACITOR.CERAMIC(HIGH DIELE)	1000P 1KV K B TS	
		C806	0CK10201515	CAPACITOR.CERAMIC(HIGH DIELE)	1000P 1KV K B TS	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		C807	0CK10201515	CAPACITOR.CERAMIC(HIGH DIELE)	1000P 1KV K B TS	
		C808	181-124B	C.ELECTROLYTIC	200MF 400V	
		C809	181-124B	C.ELECTROLYTIC	200MF 400V	
		C810	0CE1076H618	CAPACITOR.ELECTROLYTIC	100M SMS 25V M FM5 TP(5)	
		C811	181-444J	C.METALPOLYESTER	0.22MF 50V J	
		C813	0CQ6821N519	CAPACITOR POLYESTER(MYLAR)	0.0068U 100V K POLY NI TP	
		C814	0CQ1031N519	CAPACITOR POLYESTER(MYLAR)	0.01U 100V K POLY NI TP	
		C815	0CE1056K618	CAPACITOR.ELECTROLYTIC	1.0MF SMS 50V M FM5 TP5	
		C817	181-143D	C.POLYPROPYLENE	0.047MF 800V J	
		C818	181-221H	CAPACITOR.ELECTROLYTIC	1000MF 35V	
		C819	0CK47101515	CAPACITOR CERAMIC(HIGH DIELE)	470P 1KV K B TS	
		C820	0CE1086F618	CAPACITOR.ELECTROLYTIC	1000M SMS 16V M FM(5) TP(5)	
		C821	0CK47101515	CAPACITOR CERAMIC(HIGH DIELE)	470P 1KV K B TS	
		C823	181-433B	C.CERAMIC	100PF 2KV	
		C824	0CE4761R650	CAPACITOR.ELECTROLYTIC	47M SM 250V M FM7.5	
		C825	0CE1071Q650	CAPACITOR.ELECTROLYTIC	100M SM 200V M FM7.5	
		C826	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C827	181-064R	CAPACITOR.ELECTROLYTIC	1MF 50V M TR	
		C828	181-093D	CAPACITOR	DE 7150FZ 103PAC 400SMKC1-14	
		C829	181-093D	CAPACITOR	DE 7150FZ 103PAC 400SMKC1-14	
		C830	0CE2276F618	CAPACITOR.ELECTROLYTIC	220MF SMS 16V M FM5 TP5	
		C831	0CE1066F618	CAPACITOR.ELECTROLYTIC	10MF SMS 16V M FM5 TP5	
		C832	0CE1086H618	CAPACITOR.ELECTROLYTIC	1000U SMS 25V M FL TP5	
		C833	0CE4761R650	CAPACITOR.ELECTROLYTIC	47M SM 250V M FM7.5	
		C834	0CQ3331N509	CAPACITOR POLYESTER(MYLAR)	0.033U 100V K POLY TP	
		C835	181-083N	C.POLYPROPYLENE	0.001MF 1600V J	
		C838	0CE1076F618	CAPACITOR.ELECTROLYTIC	100MF SMS 16V M FM5 TP5	
		C839	0CQ1031N519	CAPACITOR POLYESTER(MYLAR)	0.01U 100V K POLY NI TP	
		C840	0CK27102510	CAPACITOR CERAMIC(HIGH DIELE)	270P 2KV K B S	
		C841	181-444E	C.METALPOLYESTER	0.1MF 50V J	
		C845	0CQ4731N509	CAPACITOR POLYESTER(MYLAR)	0.047U 100V K POLY TP	
		C9	0CN1010K519	CAPACITOR TUBULA(HIGH DIELE)	100PF 50V K B TA52	
		C901	0CE1066K618	CAPACITOR.ELECTROLYTIC	10MF SMS 50V M FM5 TP5	
		C902	0CE1076K618	CAPACITOR.ELECTROLYTIC	100MF SMS 50V M FM5 TP5	
		C903	0CE4746K618	CAPACITOR.ELECTROLYTIC	0.47MF SMS 50V M FM5 TP5	
		C904	0CE1066K618	CAPACITOR.ELECTROLYTIC	10MF SMS 50V M FM5 TP5	
		C905	0CC3910K405	CAPACITOR CERAMIC(TEMP COMP)	390P 50V J SL TP	
		C906	0CC3910K405	CAPACITOR CERAMIC(TEMP COMP)	390P 50V J SL TP	
		C907	0CC3910K405	CAPACITOR CERAMIC(TEMP COMP)	390P 50V J SL TP	
		C908	0CC1010K405	CAPACITOR.CERAMIC(TEMP COMP)	100P 50V J SL TS	
		C909	0CC1010K405	CAPACITOR.CERAMIC(TEMP COMP)	100P 50V J SL TS	
		C910	0CC1010K405	CAPACITOR.CERAMIC(TEMP COMP)	100P 50V J SL TS	
		C911	0CK22202510	CAPACITOR CERAMIC(HIGH DIELE)	2200PF 2KV K B S	
		C913	0CE2251R618	CAPACITOR.ELECTROLYTIC	2.2M SM 250V M FM5 TP5	
		DL501	175-013B	DELAY LINE	MS-19P-53A (KINSEKI)	
		DL502	150-377C	COIL	DELAY 350NS W/O TRAP	
		D1	0DD414809ED	DIODE	(DS4148) TA	
		D108	0DD414809ED	DIODE	(DS4148) TA	
		D109	0DD414809ED	DIODE	(DS4148) TA	
		D11	0DD414809ED	DIODE	(DS4148) TA	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		D110	0DD859009AA	DIODE	SILICON MA859 TAPING	
		D111	0DD414809ED	DIODE	(DS4148) TA	
		D112	0DD414809ED	DIODE	(DS4148) TA	
		D113	0DD859009AA	DIODE	SILICON MA859 TAPING	
		D12	0DD414809ED	DIODE	(DS4148) TA	
		D13	0DD414809ED	DIODE	(DS4148) TA	
		D151	0DD414809ED	DIODE	(DS4148) TA	
		D152	0DD414809ED	DIODE	(DS4148) TA	
		D153	0DD414809ED	DIODE	(DS4148) TA	
		D154	0DD414809ED	DIODE	(DS4148) TA	
		D155	0DD414809ED	DIODE	(DS4148) TA	
		D301	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D402	0DD400000AF	DIODE	RU4C	
		D403	0DD400000AB	DIODE	RU4DS.SANKEN	
		D404	0DD414809ED	DIODE	(DS4148) TA	
		D405	0DD414809ED	DIODE	(DS4148) TA	
		D406	0DD414809ED	DIODE	(DS4148) TA	
		D407	0DD200009AF	DIODE	RU-2MV.TP(52MM).SANKEN	
		D408	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D409	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D410	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D411	0DD414809ED	DIODE	(DS4148) TA	
		D412	0DD414809ED	DIODE	(DS4148) TA	
		D451	0DD414809ED	DIODE	(DS4148) TA	
		D5	0DD414809ED	DIODE	(DS4148) TA	
		D500	0DD414809ED	DIODE	(DS4148) TA	
		D501	0DD414809ED	DIODE	(DS4148) TA	
		D503	0DD859009AA	DIODE	SILICON MA859 TAPING	
		D504	0DD859009AA	DIODE	SILICON MA859 TAPING	
		D505	0DD414809ED	DIODE	(DS4148) TA	
		D506	0DD414809ED	DIODE	(DS4148) TA	
		D605	0DD414809ED	DIODE	(DS4148) TA	
		D606	0DD414809ED	DIODE	(DS4148) TA	
		D801	0DD414809ED	DIODE	(DS4148) TA	
		D802	0DD414809ED	DIODE	(DS4148) TA	
		D803	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D804	0DD120000BB	DIODE	FML-G12S	
		D805	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D806	0DD400000AF	DIODE	RU4C	
		D807	0DD414809ED	DIODE	(DS4148) TA	
		D808	0DD414809ED	DIODE	(DS4148) TA	
		D809	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D810	0DD150009CA	DIODE	RGP15J.TP(52MM).GI	
		D901	0DD414809ED	DIODE	(DS4148) TA	
		D902	0DD414809ED	DIODE	(DS4148) TA	
		D903	0DD414809ED	DIODE	(DS4148) TA	
		D905	0DD414809ED	DIODE	(DS4148) TA	
		D906	0DD414809ED	DIODE	(DS4148) TA	
		D907	0DD414809ED	DIODE	(DS4148) TA	
		FR401	0RS1201J607	RESISTOR.FIX METAL FILM OXIDE	1.20K 1W 5% TA62	
		FR402	0RF1000J607	RESISTOR.FUSIBLE	100 1W 5% TA62	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		FR403	0RF0201K666	RESISTOR FUSIBLE	2.0 2W SF25	
		FR404	0RF0470J607	RESISTOR.FUSIBLE	0.47 1W 5% TA62	
		FR405	0RS0470J607	RESISTOR.FIX METAL FILM OXIDE	0.47 1W 5% TA62	
		FR406	0RF0101H609	RESISTOR FUSIBLE	1.0 1/2W 5 TA52	
		FR407	0RF0470H609	RESISTOR FUSIBLE	0.47 1/2W 5 TA52	
		FR408	0RF0470H609	RESISTOR FUSIBLE	0.47 1/2W 5 TA52	
		FR451	0RD0102H609	RESISTOR.FIXED CARBON FILM	10 1/2W 5 TA52	
		FR459	0RF0102J607	RESISTOR.FUSIBLE	10 1W 5% TA62	
		FR601	0RF0470J607	RESISTOR.FUSIBLE	0.47 1W 5% TA62	
		FR801	0RF0101H609	RESISTOR FUSIBLE	1.0 1/2W 5 TA52	
		FR802	0RF0470J607	RESISTOR.FUSIBLE	0.47 1W 5% TA62	
		F801	0FT3151B513	FUSE TIME LAG	3.15A 250V 5.2X20 G SMK	
		IC1	0IMI823401B	IC.MITSUBISHI	M37102M8-AA4SP(GS8234-01B)64SD	
		IC110	0ISA755500A	IC. SANYO	LA7555 PLL	
		IC151	0IT0861500A	IC. TOSHIBA	TA8615N	
		IC2	0IXI240200A	IC. XICOR	X2402(E-PROM)	
		IC200	0IT0872000A	IC.TOSHIBA	TA8720AN 30P S-TEM/CH+A/V	
		IC201	0IM0140530A	IC. MOTOROLA	MC14053 B	
		IC3	0ISE805200A	IC. SEIKO	S8052ALB	
		IC301	0ISA783300A	IC.SANYO	LA7833 7SIP V/OUT 2.2A(P-P)	
		IC401	0IKE781200A	IC.KEC	KIA7812P(KIA78012AP).KEC	
		IC501	0IT0865900A	IC. TOSHIBA	TA8659AN	
		IC601	0ISG200900A	IC. SGS-THOMSON	TDA2009A.11SIP.LIN SOUND AMP	
		IC650	0IPH842500A	IC. PHILIPS	TDA8425 SOUND CONTROL	
		IC801	0ISM460520A	IC.SIEMENS	TDA4605-2 8DIP SMPS CONTROLER	
		IC802	0IGS780500A	IC. GOLDSTAR ELECTRON	GL7805 REGULATOR	
		IC803	0ITF110100A	IC. TELEFUNKEN	TCDT1101G.6DIP.PHOTO COUPLER	
		J40	0RD0102F609	RESISTOR.FIXED CARBON FILM	10 1/6W 5 TA52	
		LD1	0DL500000AA	DIODE LED	SLV-50(DL-ILR)	
		LD801	0DL500000AA	DIODE LED	SLV-50(DL-ILR)	
		L1	150-163N	COIL	OSD CONTROL(MC-15A)	
		L101	150-166G	COIL	CHOKE 10UH	
		L110	150-167A	COIL	CHOKE 0.55UH K	
		L112	150-167A	COIL	CHOKE 0.55UH K	
		L113	150-489W	COIL	6.0MHZ SIF	
		L114	0LA0391K119	INDUCTOR AXIAL LEAD	3.9UH K 2.3*3.4 TP	
		L115	150-489U	COIL	VCO/AFT 38.0MHZ	
		L116	0LA0122K119	INDUCTOR AXIAL LEAD	12UH K 2.3*3.4 TP	
		L117	150-489U	COIL	VCO/AFT 38.0MHZ	
		L118	150-164P	COIL	P-6.0MHZ TRAP	
		L119	150-164N	COIL	P-4.5MHZ TRAP	
		L151	150-489W	COIL	6.0MHZ SIF	
		L152	150-489V	COIL	5.5MHZ ID	
		L154	0LA0821K119	INDUCTOR AXIAL LEAD	8.2UH K 2.3*3.4 TP	
		L155	0LA0561K119	INDUCTOR AXIAL LEAD	5.6UH K 2.3*3.4 TP	
		L156	0LA0122K119	INDUCTOR AXIAL LEAD	12UH K 2.3*3.4 TP	
		L157	0LA0222K119	INDUCTOR AXIAL LEAD	22UH K 2.3*3.4 TP	
		L158	0LA0821K119	INDUCTOR AXIAL LEAD	8.2UH K 2.3*3.4 TP	
		L2	0LA0222K119	INDUCTOR AXIAL LEAD	22UH K 2.3*3.4 TP	
		L200	0LA0682K119	INDUCTOR AXIAL LEAD	68UH K 2.3*3.4 TP	
		L201	0LA0152K119	INDUCTOR AXIAL LEAD	15UH K 2.3*3.4 TP	
		L202	0LA0181K119	INDUCTOR AXIAL LEAD	1.8UH K 2.3*3.4 TP	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		L401	0LA0152K119	INDUCTOR AXIAL LEAD	15UH K 2.3*3.4 TP	
		L403	125-022K	CORE	FERRITE 1UH TAPING	
		L404	150-840A	COIL	H-LINEARITY(NC-01J)	
		L405	150-1091	COIL	PL 6800 UHJ	
		L407	150-166G	COIL	CHOKE 10UH	
		L451	150-717G	COIL	CHOKE 600MH	
		L500	150-216B	COIL	TRANS (CHROMA-DEMOD.)	
		L501	150-216B	COIL	TRANS (CHROMA-DEMOD.)	
		L502	0LA0681K119	INDUCTOR AXIAL LEAD	6.8UH K 2.3*3.4 TP	
		L503	150-489Z	COIL	BELL FILTER(MC92A)	
		L504	150-489X	COIL	SECAM ID	
		L506	0LA0822K119	INDUCTOR AXIAL LEAD	82UH K 2.3*3.4 TP	
		L507	0LA0152K119	INDUCTOR AXIAL LEAD	15UH K 2.3*3.4 TP	
		L508	0LA0222K119	INDUCTOR AXIAL LEAD	22UH K 2.3*3.4 TP	
		L509	0LA0272K119	INDUCTOR AXIAL LEAD	27UH K 2.3*3.4 TP	
		L512	150-489Y	COIL	DL PHASE	
		L650	0LA0102K119	INDUCTOR AXIAL LEAD	10UH K 2.3*3.4 TP	
		L801	150-897B	COIL	L/F 20MH 0.2OHM 3.5A(AC)	
		L802	150-897B	COIL	L/F 20MH 0.2OHM 3.5A(AC)	
		L803	150-235E	COIL	HOR.CHOKE 1MH(1A)	
		L804	125-123A	CORE	FERRITE BFD3565R2F(TAPING)	
		L805	125-123A	CORE	FERRITE BFD3565R2F(TAPING)	
		L806	125-123A	CORE	FERRITE BFD3565R2F(TAPING)	
		L807	125-123A	CORE	FERRITE BFD3565R2F(TAPING)	
		L808	125-123A	CORE	FERRITE BFD3565R2F(TAPING)	
		PA1	106-048A	PRE-AMP	SBX-1677-02(38.0KHZ)	
		P102	387-552M	CONNECTOR	AS.2P (HOUSING TO HOUSING)INS	
		P851	387-475A	CONNECTOR	ASSY.3P(IL-G)	
		P852	387-463B	CONNECTOR	ASSY.9P (IL-G)	
		P901	387-459A	CONNECTOR	ASSY.5P (IL-G)	
		P902	387-458J	CONNECTOR	ASSY.4P (IL-G)	
		Q1	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q10	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q108	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q109	0TR102009AB	TRANSISTOR	KRC102M.TP(KRC1202).KEC	
		Q11	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q110	0TR102009AB	TRANSISTOR	KRC102M.TP(KRC1202).KEC	
		Q111	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q112	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q12	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q13	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q151	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q152	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q153	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q154	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q155	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q156	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q16	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q200	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q201	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		Q202	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q204	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q301	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q302	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q4	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q403	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q404	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q405	0TR206800BA	TRANSISTOR	KTC2068.KEC	
		Q406	0TR188600AA	TRANSISTOR	2SD1886.SANYO	
		Q451	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q452	0TR135100AB	TRANSISTOR	KTD1351-Y(KTD880).KEC	
		Q453	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q454	0TR102009AB	TRANSISTOR	KRC102M.TP(KRC1202).KEC	
		Q5	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q502	0TR102009AB	TRANSISTOR	KRC102M.TP(KRC1202).KEC	
		Q503	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q504	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q505	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q505	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q506	0TR102009AB	TRANSISTOR	KRC102M.TP(KRC1202).KEC	
		Q6	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q601	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q650	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q7	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q8	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q801	0TF910000AA	FET	BUZ91A TO-220AB SIEMENS	
		Q802	0TR223600AB	TRANSISTOR	KTC2236-O.KEC	
		Q803	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q804	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q805	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q9	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q901	0TR206800BA	TRANSISTOR	KTC2068.KEC	
		Q902	0TR206800BA	TRANSISTOR	KTC2068.KEC	
		Q903	0TR206800BA	TRANSISTOR	KTC2068.KEC	
		Q904	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q905	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q906	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q907	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		Q908	0TR126609AA	TRANSISTOR	KTA1266-TP-Y (KTA1015) KEC	
		Q909	0TR319809AA	TRANSISTOR	KTC3198-TP-Y (KTC1815)KEC	
		RA1	167-040A	IC	R-ARRAY(12X47K)	
		RA2	167-040C	IC	R-ARRAY(8X10K)	
		RA3	167-040D	IC	R-ARRAY(4X47K).2.5P	
		RL801	141-018A	RELAY	DG12D1-0(M)	
		RL802	141-013A	RELAY	HR-CR323DC5V(HANGUK)	
		R1	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R10	0RD5601F609	RESISTOR.FIXED CARBON FILM	5.6K 1/6W 5 TA52	
		R101	0RD4704F609	RESISTOR.FIXED CARBON FILM	4.7M 1/6W 5 TA52	
		R102	0RD4704F609	RESISTOR.FIXED CARBON FILM	4.7M 1/6W 5 TA52	
		R103	0RD4704F609	RESISTOR.FIXED CARBON FILM	4.7M 1/6W 5 TA52	
		R104	0RD4704F609	RESISTOR.FIXED CARBON FILM	4.7M 1/6W 5 TA52	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R105	0RD8202F609	RESISTOR.FIXED CARBON FILM	82K 1/6W 5 TA52	
		R106	0RD1003F609	RESISTOR.FIXED CARBON FILM	100K 1/6W 5 TA52	
		R107	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R108	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R109	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R11	0RD5601F609	RESISTOR.FIXED CARBON FILM	5.6K 1/6W 5 TA52	
		R110	0RD3300F609	RESISTOR.FIXED CARBON FILM	330 1/6W 5 TA52	
		R111	0RD2202F609	RESISTOR.FIXED CARBON FILM	22K 1/6W 5 TA52	
		R112	0RD5601F609	RESISTOR.FIXED CARBON FILM	5.6K 1/6W 5 TA52	
		R113	0RD2200G609	RESISTOR.FIXED CARBON FILM	220 1/4W 5 TA52	
		R114	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R115	0RD0272F609	RESISTOR.FIXED CARBON FILM	27 1/6W 5% TA	
		R116	0RD6800F609	RESISTOR.FIXED CARBON FILM	680 1/6W 5 TA52	
		R117	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R118	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R119	0RD1302F609	RESISTOR.FIXED CARBON FILM	13K 1/6W 5 TA52	
		R12	0RD2402F609	RESISTOR.FIXED CARBON FILM	24K 1/6W 5 TA52	
		R120	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R121	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R122	0RD5601F609	RESISTOR.FIXED CARBON FILM	5.6K 1/6W 5 TA52	
		R123	0RD2002F609	RESISTOR.FIXED CARBON FILM	20K 1/6W 5 TA52	
		R124	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R125	0RD4701G609	RESISTOR.FIXED CARBON FILM	4.7K 1/4W 5 TA52	
		R126	0RD2202F609	RESISTOR.FIXED CARBON FILM	22K 1/6W 5 TA52	
		R127	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R128	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R129	0RD0682F609	RESISTOR.FIXED CARBON FILM	68 1/6W 5 TA52	
		R13	0RD2402F609	RESISTOR.FIXED CARBON FILM	24K 1/6W 5 TA52	
		R130	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R131	0RD5600F609	RESISTOR.FIXED CARBON FILM	560 1/6W 5 TA52	
		R132	0RD5600F609	RESISTOR.FIXED CARBON FILM	560 1/6W 5 TA52	
		R133	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R134	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R135	0RD2702F609	RESISTOR.FIXED CARBON FILM	27K 1/6W 5 TA52	
		R136	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R137	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R138	0RD2702F609	RESISTOR.FIXED CARBON FILM	27K 1/6W 5 TA52	
		R139	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R14	0RD2402F609	RESISTOR.FIXED CARBON FILM	24K 1/6W 5 TA52	
		R140	0RD1502F609	RESISTOR.FIXED CARBON FILM	15K 1/6W 5 TA52	
		R141	0RD1202F609	RESISTOR.FIXED CARBON FILM	12K 1/6W 5 TA52	
		R15	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R151	0RD1801F609	RESISTOR.FIXED CARBON FILM	1.8K 1/6W 5 TA52	
		R151	0RD3302F609	RESISTOR.FIXED CARBON FILM	33K 1/6W 5 TA52	
		R152	0RD1300G609	RESISTOR.FIXED CARBON FILM	130 1/4W 5 TA52	
		R153	0RD1300G609	RESISTOR.FIXED CARBON FILM	130 1/4W 5 TA52	
		R154	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R155	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R156	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R157	0RD8200F609	RESISTOR.FIXED CARBON FILM	820 1/6W 5 TA52	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R16	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R160	0RD1200F609	RESISTOR.FIXED CARBON FILM	120 1/6W 5 TA52	
		R161	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R162	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R163	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R164	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R165	0RD9101F609	RESISTOR.FIXED CARBON FILM	9.1K 1/6W 5 TA52	
		R166	0RD1003F609	RESISTOR.FIXED CARBON FILM	100K 1/6W 5 TA52	
		R167	0RD6800G609	RESISTOR.FIXED CARBON FILM	680 1/4W 5 TA52	
		R168	0RD6800G609	RESISTOR.FIXED CARBON FILM	680 1/4W 5 TA52	
		R169	0RD0272F609	RESISTOR.FIXED CARBON FILM	27 1/6W 5% TA	
		R17	0RD3002F609	RESISTOR.FIXED CARBON FILM	30K 1/6W 5 TA52	
		R170	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R171	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R172	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R173	0RD3001F609	RESISTOR.FIXED CARBON FILM	3.0K 1/6W 5 TA52	
		R174	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R175	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R176	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R177	0RD1004F609	RESISTOR.FIXED CARBON FILM	1.0M 1/6W 5 TA52	
		R178	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R179	0RD4701F609	RESISTOR.FIXED CARBON FILM	4.7K 1/6W 5 TA52	
		R18	0RD3601F609	RESISTOR.FIXED CARBON FILM	3.6K 1/6W 5 TA52	
		R180	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R181	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R182	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R183	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R184	0RD2700F609	RESISTOR.FIXED CARBON FILM	270 1/6W 5 TA52	
		R185	0RD5100F609	RESISTOR.FIXED CARBON FILM	510 1/6W 5 TA52	
		R186	0RD3000F609	RESISTOR.FIXED CARBON FILM	300 1/6W 5 TA52	
		R187	0RD9102F609	RESISTOR.FIXED CARBON FILM	91K 1/6W 5 TA52	
		R188	0RD9102F609	RESISTOR.FIXED CARBON FILM	91K 1/6W 5 TA52	
		R189	0RD9102F609	RESISTOR.FIXED CARBON FILM	91K 1/6W 5 TA52	
		R19	0RD5601F609	RESISTOR.FIXED CARBON FILM	5.6K 1/6W 5 TA52	
		R2	0RD4700F609	RESISTOR.FIXED CARBON FILM	470 1/6W 5 TA52	
		R20	0RD3601F609	RESISTOR.FIXED CARBON FILM	3.6K 1/6W 5 TA52	
		R200	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R201	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R202	0RD0822F609	RESISTOR.FIXED CARBON FILM	82 1/6W 5 TA52	
		R203	0RD0752F609	RESISTOR.FIXED CARBON FILM	75 1/6W 5 TA52	
		R204	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R205	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R206	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R207	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R208	0RD0822F609	RESISTOR.FIXED CARBON FILM	82 1/6W 5 TA52	
		R209	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R21	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R212	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R213	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R214	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R215	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R218	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R219	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R22	0RD3900F609	RESISTOR.FIXED CARBON FILM	390 1/6W 5 TA52	
		R221	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R222	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R223	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R224	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R225	0RD0822F609	RESISTOR.FIXED CARBON FILM	82 1/6W 5 TA52	
		R23	0RD3900F609	RESISTOR.FIXED CARBON FILM	390 1/6W 5 TA52	
		R230	0RD0752F609	RESISTOR.FIXED CARBON FILM	75 1/6W 5 TA52	
		R231	0RD0752F609	RESISTOR.FIXED CARBON FILM	75 1/6W 5 TA52	
		R232	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R233	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R234	0RD2700F609	RESISTOR.FIXED CARBON FILM	270 1/6W 5 TA52	
		R235	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R236	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R237	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R238	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R239	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R24	0RD3900F609	RESISTOR.FIXED CARBON FILM	390 1/6W 5 TA52	
		R241	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R244	0RD0752H609	RESISTOR.FIXED CARBON FILM	75 1/2W 5 TA52	
		R247	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R249	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R25	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R250	0RD1801F609	RESISTOR.FIXED CARBON FILM	1.8K 1/6W 5 TA52	
		R251	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R252	0RD2000F609	RESISTOR.FIXED CARBON FILM	200 1/6W 5 TA52	
		R254	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R255	0RD1201F609	RESISTOR.FIXED CARBON FILM	1.2K 1/6W 5 TA52	
		R256	0RD3301F609	RESISTOR.FIXED CARBON FILM	3.3K 1/6W 5 TA52	
		R257	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R258	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R259	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R26	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R260	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R27	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R28	0RD2401F609	RESISTOR.FIXED CARBON FILM	2.4K 1/6W 5 TA52	
		R29	0RD1301F609	RESISTOR.FIXED CARBON FILM	1.3K 1/6W 5 TA52	
		R3	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R30	0RD4701F609	RESISTOR.FIXED CARBON FILM	4.7K 1/6W 5 TA52	
		R301	0RD3002F609	RESISTOR.FIXED CARBON FILM	30K 1/6W 5 TA52	
		R302	0RD2403F609	RESISTOR.FIXED CARBON FILM	240K 1/6W 5 TA52	
		R303	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R304	0RD5600F609	RESISTOR.FIXED CARBON FILM	560 1/6W 5 TA52	
		R305	0RD1001G609	RESISTOR.FIXED CARBON FILM	1K 1/4W 5 TA52	
		R306	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R307	0RD6201F609	RESISTOR.FIXED CARBON FILM	6.2K 1/6W 5 TA52	
		R308	0RD4702G609	RESISTOR.FIXED CARBON FILM	47K 1/4W 5 TA52	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R309	0RD1002G609	RESISTOR.FIXED CARBON FILM	10K 1/4W 5 TA52	
		R31	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R310	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R311	0RS1201J607	RESISTOR.FIX METAL FILM OXIDE	1.20K 1W 5% TA62	
		R312	0RS1201J607	RESISTOR.FIX METAL FILM OXIDE	1.20K 1W 5% TA62	
		R314	0RD1802F609	RESISTOR.FIXED CARBON FILM	18K 1/6W 5 TA52	
		R315	0RD2402F609	RESISTOR.FIXED CARBON FILM	24K 1/6W 5 TA52	
		R316	0RS1502H609	RESISTOR.FIX METAL FILM OXIDE	15K 1/2W 5 TA52	
		R317	0RD2001G609	RESISTOR.FIXED CARBON FILM	2.0K 1/4W 5 TA52	
		R318	0RS2200J607	RESISTOR.FIX METAL FILM OXIDE	220 1W 5% TA62	
		R319	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R32	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R320	0RS0161K666	RESISTOR.FIX METAL FILM OXIDE	1.6 2W 5 SF25	
		R321	0RD7500F609	RESISTOR.FIXED CARBON FILM	750 1/6W 5 TA52	
		R322	0RD7500F609	RESISTOR.FIXED CARBON FILM	750 1/6W 5 TA52	
		R33	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R34	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R35	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R38	0RD2002F609	RESISTOR.FIXED CARBON FILM	20K 1/6W 5 TA52	
		R39	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R40	0RD3302F609	RESISTOR.FIXED CARBON FILM	33K 1/6W 5 TA52	
		R401	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R402	0RD3601F609	RESISTOR.FIXED CARBON FILM	3.6K 1/6W 5 TA52	
		R404	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R405	0RD0822G609	RESISTOR.FIXED CARBON FILM	82 1/4W 5 TA52	
		R406	0RD4700F609	RESISTOR.FIXED CARBON FILM	470 1/6W 5 TA52	
		R407	0RD3001F609	RESISTOR.FIXED CARBON FILM	3.0K 1/6W 5 TA52	
		R408	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R409	0RD2403F609	RESISTOR.FIXED CARBON FILM	240K 1/6W 5 TA52	
		R41	0RD3302F609	RESISTOR.FIXED CARBON FILM	33K 1/6W 5 TA52	
		R410	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R411	0RD2702F609	RESISTOR.FIXED CARBON FILM	27K 1/6W 5 TA52	
		R412	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R413	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R414	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R415	0RD1600F609	RESISTOR.FIXED CARBON FILM	160 1/6W 5 TA52	
		R42	0RD3302F609	RESISTOR.FIXED CARBON FILM	33K 1/6W 5 TA52	
		R422	0RD4300F609	RESISTOR.FIXED CARBON FILM	430 1/6W 5 TA52	
		R423	0RD1800F609	RESISTOR.FIXED CARBON FILM	180 1/6W 5 TA52	
		R424	0RD5101H609	RESISTOR.FIXED CARBON FILM	5.1K 1/2W 5 TA52	
		R425	0RS6801K666	RESISTOR.FIX METAL FILM OXIDE	6.8K 2W 5 SF25	
		R426	0RS6801K666	RESISTOR.FIX METAL FILM OXIDE	6.8K 2W 5 SF25	
		R428	0RD0332H609	RESISTOR.FIXED CARBON FILM	33 1/2W 5 TA52	
		R429	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R43	0RD4701F609	RESISTOR.FIXED CARBON FILM	4.7K 1/6W 5 TA52	
		R430	0RD2001H609	RESISTOR.FIXED CARBON FILM	2.0K 1/2W 5 TA52	
		R431	0RD6200G609	RESISTOR.FIXED CARBON FILM	620 1/4W 5 TA52	
		R432	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R433	0RD5601H609	RESISTOR.FIXED CARBON FILM	5.6K 1/2W 5 M15	
		R434	0RD5102G609	RESISTOR.FIXED CARBON FILM	51K 1/4W 5 TA52	

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S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R435	0RD5102G609	RESISTOR.FIXED CARBON FILM	51K 1/4W 5 TA52	
		R436	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R437	0RD4701F609	RESISTOR.FIXED CARBON FILM	4.7K 1/6W 5 TA52	
		R44	0RD4701F609	RESISTOR.FIXED CARBON FILM	4.7K 1/6W 5 TA52	
		R440	0RD2001H609	RESISTOR.FIXED CARBON FILM	2.0K 1/2W 5 TA52	
		R45	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R452	0RD1003F609	RESISTOR.FIXED CARBON FILM	100K 1/6W 5 TA52	
		R453	0RD1102F609	RESISTOR.FIXED CARBON FILM	11K 1/6W 5 TA52	
		R454	0RD2703F609	RESISTOR.FIXED CARBON FILM	270K 1/6W 5 TA52	
		R455	0RD8201F609	RESISTOR.FIXED CARBON FILM	8.2K 1/6W 5 TA52	
		R456	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R457	0RD3002F609	RESISTOR.FIXED CARBON FILM	30K 1/6W 5 TA52	
		R458	0RD3901F609	RESISTOR.FIXED CARBON FILM	3.9K 1/6W 5 TA52	
		R46	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R460	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R461	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R462	0RD2402F609	RESISTOR.FIXED CARBON FILM	24K 1/6W 5 TA52	
		R463	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R464	0RD1302F609	RESISTOR.FIXED CARBON FILM	13K 1/6W 5 TA52	
		R465	0RD2702F609	RESISTOR.FIXED CARBON FILM	27K 1/6W 5 TA52	
		R47	0RD2002F609	RESISTOR.FIXED CARBON FILM	20K 1/6W 5 TA52	
		R48	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R49	0RD6801F609	RESISTOR.FIXED CARBON FILM	6.8K 1/6W 5 TA52	
		R50	0RD2002F609	RESISTOR.FIXED CARBON FILM	20K 1/6W 5 TA52	
		R501	0RD8201F609	RESISTOR.FIXED CARBON FILM	8.2K 1/6W 5 TA52	
		R502	0RD5602F609	RESISTOR.FIXED CARBON FILM	56K 1/6W 5 TA52	
		R506	0RD6201F609	RESISTOR.FIXED CARBON FILM	6.2K 1/6W 5 TA52	
		R507	0RD6801F609	RESISTOR.FIXED CARBON FILM	6.8K 1/6W 5 TA52	
		R51	0RD1502F609	RESISTOR.FIXED CARBON FILM	15K 1/6W 5 TA52	
		R510	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R511	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R512	0RD2202F609	RESISTOR.FIXED CARBON FILM	22K 1/6W 5 TA52	
		R513	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R514	0RD5600F609	RESISTOR.FIXED CARBON FILM	560 1/6W 5 TA52	
		R515	0RD8201F609	RESISTOR.FIXED CARBON FILM	8.2K 1/6W 5 TA52	
		R516	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R517	0RD4301F609	RESISTOR.FIXED CARBON FILM	4.3K 1/6W 5 TA52	
		R518	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R519	0RD3900F609	RESISTOR.FIXED CARBON FILM	390 1/6W 5 TA52	
		R520	0RD2001F609	RESISTOR.FIXED CARBON FILM	2.0K 1/6W 5 TA52	
		R521	0RD3303F609	RESISTOR.FIXED CARBON FILM	330K 1/6W 5 TA52	
		R522	0RD3000F609	RESISTOR.FIXED CARBON FILM	300 1/6W 5 TA52	
		R523	0RD3302F609	RESISTOR.FIXED CARBON FILM	33K 1/6W 5 TA52	
		R524	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R526	0RD5603F609	RESISTOR.FIXED CARBON FILM	560K 1/6W 5 TA52	
		R527	0RD4704F609	RESISTOR.FIXED CARBON FILM	4.7M 1/6W 5 TA52	
		R528	0RD4704F609	RESISTOR.FIXED CARBON FILM	4.7M 1/6W 5 TA52	
		R529	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R530	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R532	0RD5603F609	RESISTOR.FIXED CARBON FILM	560K 1/6W 5 TA52	

「REPLACEMENT PARTS LIST」 PAGE : 17

MODEL : CF-29C10

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R533	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R534	0RD3301F609	RESISTOR.FIXED CARBON FILM	3.3K 1/6W 5 TA52	
		R536	0RD8201F609	RESISTOR.FIXED CARBON FILM	8.2K 1/6W 5 TA52	
		R537	0RD5600F609	RESISTOR.FIXED CARBON FILM	560 1/6W 5 TA52	
		R538	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R539	0RD1601F609	RESISTOR.FIXED CARBON FILM	1.6K 1/6W 5 TA52	
		R54	0RD4301F609	RESISTOR.FIXED CARBON FILM	4.3K 1/6W 5 TA52	
		R540	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R541	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R542	0RD1003F609	RESISTOR.FIXED CARBON FILM	100K 1/6W 5 TA52	
		R544	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R547	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R548	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R549	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R55	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R550	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R551	0RD6800G609	RESISTOR.FIXED CARBON FILM	680 1/4W 5 TA52	
		R552	0RD3302F609	RESISTOR.FIXED CARBON FILM	33K 1/6W 5 TA52	
		R553	0RD4700F609	RESISTOR.FIXED CARBON FILM	470 1/6W 5 TA52	
		R554	0RD6801F609	RESISTOR.FIXED CARBON FILM	6.8K 1/6W 5 TA52	
		R555	0RD2701F609	RESISTOR.FIXED CARBON FILM	2.7K 1/6W 5 TA52	
		R556	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R557	0RD3302F609	RESISTOR.FIXED CARBON FILM	33K 1/6W 5 TA52	
		R558	0RD3301F609	RESISTOR.FIXED CARBON FILM	3.3K 1/6W 5 TA52	
		R559	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R6	0RD4700F609	RESISTOR.FIXED CARBON FILM	470 1/6W 5 TA52	
		R60	0RD1004F609	RESISTOR.FIXED CARBON FILM	1.0M 1/6W 5 TA52	
		R601	0RD0102H609	RESISTOR.FIXED CARBON FILM	10 1/2W 5 TA52	
		R603	0RD2201H609	RESISTOR.FIXED CARBON FILM	2.2K 1/2W 5 TA52	
		R604	0RD0102H609	RESISTOR.FIXED CARBON FILM	10 1/2W 5 TA52	
		R606	0RD1301F609	RESISTOR.FIXED CARBON FILM	1.3K 1/6W 5 TA52	
		R609	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R610	0RD0392F609	RESISTOR.FIXED CARBON FILM	39 1/6W 5 TA52	
		R612	0RD2400F609	RESISTOR.FIXED CARBON FILM	240 1/6W 5 TA52	
		R613	0RD2400F609	RESISTOR.FIXED CARBON FILM	240 1/6W 5 TA52	
		R618	0RD1301F609	RESISTOR.FIXED CARBON FILM	1.3K 1/6W 5 TA52	
		R619	0RD0392F609	RESISTOR.FIXED CARBON FILM	39 1/6W 5 TA52	
		R650	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R652	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R653	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R654	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R655	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R656	0RD4702F609	RESISTOR.FIXED CARBON FILM	47K 1/6W 5 TA52	
		R657	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R658	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R659	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R660	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R801	180-042K	RESISTOR	470K OHM 1/2W K	
		R802	180-344H	RESISTOR CEMENT RWR	1 OHM 10W J	
		R803	0RD2003H609	RESISTOR.FIXED CARBON FILM	200K 1/2W 5 TA52	

「REPLACEMENT PARTS LIST」 PAGE : 18

MODEL : CF-29C10

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R804	0RS2202L667	RESISTOR.FIX METAL FILM OXIDE	22K 3W 5 SF30	
		R805	0RD6803H609	RESISTOR.FIXED CARBON FILM	680K 1/2W 5 TA52	
		R806	0RD1202H609	RESISTOR.FIXED CARBON FILM	12K 1/2W 5 TA52	
		R807	0RD1503H609	RESISTOR.FIXED CARBON FILM	150K 1/2W 5 TA52	
		R808	0RD1203H609	RESISTOR.FIXED CARBON FILM	120K 1/2W 5 TA52	
		R810	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R811	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R812	0RD3301F609	RESISTOR.FIXED CARBON FILM	3.3K 1/6W 5 TA52	
		R813	0RD0272H609	RESISTOR.FIXED CARBON FILM	27 1/2W 5 TA52	
		R815	0RS0472K666	RESISTOR.FIX METAL FILM OXIDE	47 2W 5 SF25	
		R816	0RS1202L667	RESISTOR.FIX METAL FILM OXIDE	12K 3W 5 SF30	
		R817	0RS0332K666	RESISTOR.FIX METAL FILM OXIDE	33 2W 5 SF25	
		R818	0RD0472H609	RESISTOR.FIXED CARBON FILM	47 1/2W 5 TA52	
		R819	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R820	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R821	0RD2200H609	RESISTOR.FIXED CARBON FILM	220 1/2W 5 TA52	
		R822	0RD0102F609	RESISTOR.FIXED CARBON FILM	10 1/6W 5 TA52	
		R823	180-783G	RESISTOR	RC 1/2W 825 K TAPING	
		R824	0RD4701F609	RESISTOR.FIXED CARBON FILM	4.7K 1/6W 5 TA52	
		R825	0RD2202H609	RESISTOR.FIXED CARBON FILM	22K 1/2W 5 TA52	
		R826	0RD4702H609	RESISTOR.FIXED CARBON FILM	47K 1/2W 5 TA52	
		R827	0RD1003F609	RESISTOR.FIXED CARBON FILM	100K 1/6W 5 TA52	
		R828	0RD2200F609	RESISTOR.FIXED CARBON FILM	220 1/6W 5 TA52	
		R829	0RD1501F609	RESISTOR.FIXED CARBON FILM	1.5K 1/6W 5 TA52	
		R830	0RD6800F609	RESISTOR.FIXED CARBON FILM	680 1/6W 5 TA52	
		R831	180-344R	RESISTOR.CEMENT RWR	220 OHM 10W	
		R832	0RS2202K666	RESISTOR.FIX METAL FILM OXIDE	22K 2W 5 SF25	
		R833	0RD2201F609	RESISTOR.FIXED CARBON FILM	2.2K 1/6W 5 TA52	
		R834	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R835	0RD1003F609	RESISTOR.FIXED CARBON FILM	100K 1/6W 5 TA52	
		R836	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R837	0RD4704F609	RESISTOR.FIXED CARBON FILM	4.7M 1/6W 5 TA52	
		R839	0RD0471H609	RESISTOR.FIXED CARBON FILM	4.7 1/2W 5 TA52	
		R840	0RD1303H609	RESISTOR.FIXED CARBON FILM	130K 1/2W 5 TA52	
		R841	0RS4701H609	RESISTOR.FIX METAL FILM OXIDE	4.7K 1/2W 5 TA52	
		R842	0RD2003H609	RESISTOR.FIXED CARBON FILM	200K 1/2W 5 TA52	
		R9	0RD5601F609	RESISTOR.FIXED CARBON FILM	5.6K 1/6W 5 TA52	
		R901	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R902	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R903	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R904	0RS1202K666	RESISTOR.FIX METAL FILM OXIDE	12K 2W 5 SF25	
		R905	0RS1202K666	RESISTOR.FIX METAL FILM OXIDE	12K 2W 5 SF25	
		R906	0RS1202K666	RESISTOR.FIX METAL FILM OXIDE	12K 2W 5 SF25	
		R907	0RD2701G609	RESISTOR.FIXED CARBON FILM	2.7K 1/4W 5 TA52	
		R908	0RD2701G609	RESISTOR.FIXED CARBON FILM	2.7K 1/4W 5 TA52	
		R909	0RD2701G609	RESISTOR.FIXED CARBON FILM	2.7K 1/4W 5 TA52	
		R910	0RD3900F609	RESISTOR.FIXED CARBON FILM	390 1/6W 5 TA52	
		R911	0RD3900F609	RESISTOR.FIXED CARBON FILM	390 1/6W 5 TA52	
		R912	0RD3900F609	RESISTOR.FIXED CARBON FILM	390 1/6W 5 TA52	
		R913	0RD0272F609	RESISTOR.FIXED CARBON FILM	27 1/6W 5% TA	

「REPLACEMENT PARTS LIST」 PAGE : 19

MODEL : CF-29C10

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		R914	0RD0272F609	RESISTOR.FIXED CARBON FILM	27 1/6W 5% TA	
		R915	0RD0272F609	RESISTOR.FIXED CARBON FILM	27 1/6W 5% TA	
		R916	0RD7500F609	RESISTOR.FIXED CARBON FILM	750 1/6W 5 TA52	
		R917	0RD6800F609	RESISTOR.FIXED CARBON FILM	680 1/6W 5 TA52	
		R918	0RD7500F609	RESISTOR.FIXED CARBON FILM	750 1/6W 5 TA52	
		R919	0RD4700F609	RESISTOR.FIXED CARBON FILM	470 1/6W 5 TA52	
		R920	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R921	0RD1001F609	RESISTOR.FIXED CARBON FILM	1.0K 1/6W 5 TA52	
		R922	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R923	0RD1801F609	RESISTOR.FIXED CARBON FILM	1.8K 1/6W 5 TA52	
		R924	0RD3301F609	RESISTOR.FIXED CARBON FILM	3.3K 1/6W 5 TA52	
		R925	0RD3300F609	RESISTOR.FIXED CARBON FILM	330 1/6W 5 TA52	
		R926	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R927	0RD1002F609	RESISTOR.FIXED CARBON FILM	10K 1/6W 5 TA52	
		R928	0RD1000F609	RESISTOR.FIXED CARBON FILM	100 1/6W 5 TA52	
		R929	0RD1503H609	RESISTOR.FIXED CARBON FILM	150K 1/2W 5 TA52	
		SW1	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW2	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW3	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW301	140-111C	SWITCH	JRS-1301	
		SW302	140-111C	SWITCH	JRS-1301	
		SW4	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW5	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW6	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW601	140-031F	SWITCH	SLIDE SSB022 (25V 1A)	
		SW602	385-102A	TERMINAL	SPEAKER	
		SW603	380-377A	JACK	DIN 01J0193 (S-JACK) WITH S/W	
		SW604	380-065B	JACK	ASSY.PHONO	
		SW605	380-066C	JACK	ASSY.PHONO(THRU-OUT)	
		SW606	380-065D	JACK	ASSY.PHONO	
		SW610	380-065B	JACK	ASSY.PHONO	
		SW611	380-065C	JACK	ASSY.PHONO	
		SW612	380-065D	JACK	ASSY.PHONO	
		SW7	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW8	140-333B	SWITCH	TACT.2P DC12V 50MA J-ALPS	
		SW801	140-289B	SWITCH	SDDF-3B(J-ALPS) TV-8	
		TH801	163-012A	THERMISTOR	PTC.PTH451A102BG180M290	
		TU101	113-207B	TUNER	115-B-4010SF	
		T401	154-179Q	FBT	FCM*179Q-25MP6	
		T402	151-386A	TRANSFORMER	H.DRIVE 19Y4BY	
		T801	151-455A	TRANSFORMER	SMPS (155V/120V)	
		VC110	181-069B	CAPACITOR	TRIMMER	
		VD801	164-003D	VARISTOR	SVC 561D-14A	
		VR110	0RV1223D330	VARIABLE RESISTOR.CARBON FILM	22K 6 ST P3 L2.5 5	
		VR301	180-451K	RESISTOR	EVN-DJAA03 B473 HORIZONTAL<TA>	
		VR401	180-451A	RESISTOR	EVN-DJAA03 B221 HORIZONTAL<TA>	
		VR451	0RV1103D330	VARIABLE RESISTOR.CARBON FILM	10K 6 ST P3 L2.5 5	
		VR452	0RV1473D330	VARIABLE RESISTOR.CARBON FILM	47K 6 ST P3 L2.5 5	
		VR501	0RV1102D330	VARIABLE RESISTOR.CARBON FILM	1.0K 6 ST P3 L2.5 5	
		VR503	180-451H	RESISTOR	EVN-DJAA03 B103 HORIZONTAL<TA>	

[REPLACEMENT PARTS LIST]

MODEL : CF-29C10

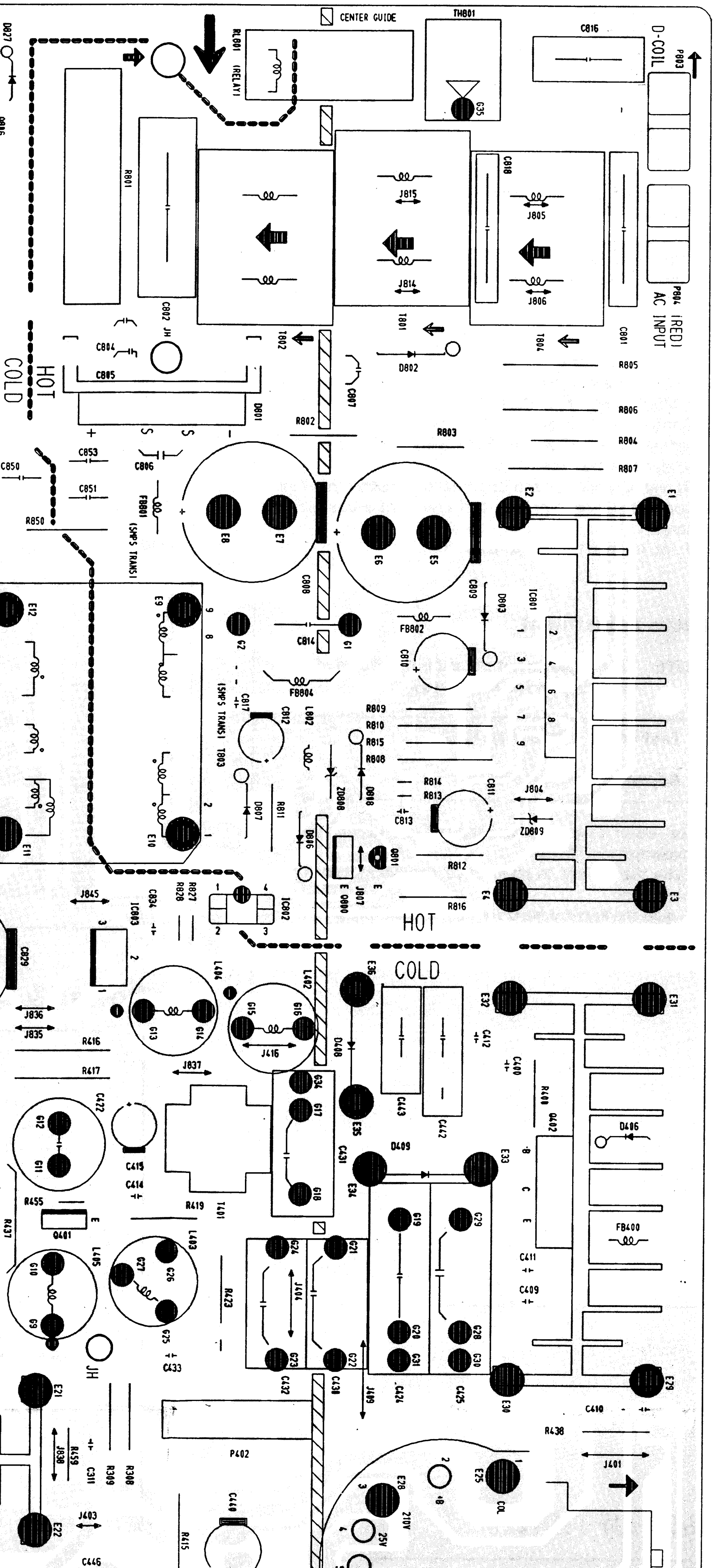
S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		VR801	180-451H	RESISTOR	EVN-DJAA03 B103 HORIZONTAL<TA>	
		VR901	0RV1501D230	VARIABLE RESISTOR.CARBON FILM	500 6 ST P3 L2.5 5	
		VR902	0RV1501D230	VARIABLE RESISTOR.CARBON FILM	500 6 ST P3 L2.5 5	
		VR903	0RV1501D230	VARIABLE RESISTOR.CARBON FILM	500 6 ST P3 L2.5 5	
		VR904	0RV1102D230	VARIABLE RESISTOR.CARBON FILM	1.0K 6 ST P3 L2.5 5	
		VR905	0RV1102D230	VARIABLE RESISTOR.CARBON FILM	1.0K 6 ST P3 L2.5 5	
		X1	156-005B	OSCILLATOR	4MHZ	
		X151	166-015B	FILTER	CSB500E	
		X401	166-187A	FILTER	RESONATOR.CSB503F2	
		X501	156-002C	RESONATOR	4.433619MHZ (TAPING)	
		X502	156-001C	OSCILLATOR	CRYSTAL 3.58MHZ	
		ZD109	0DZ240009BC	DIODE ZENER	MTZ2.4B 2.4V K-ROHM TP	
		ZD110	0DZ510009AB	DIODE ZENER	MTZ5.1B.TP(52MM).ROHM	
		ZD200	0DZ910009BA	DIODE ZENER	MTZ9.1B.TP(52MM).ROHM	
		ZD3	0DZ330009BA	DIODE ZENER	ZENER HZT33 TAPING	
		ZD301	0DZ120009AA	DIODE ZENER	Z12BM TA	
		ZD302	0DZ750009AA	DIODE ZENER	MTZ7.5B.TP(52MM).ROHM	
		ZD303	0DZ360009DA	DIODE ZENER	MTZ3.6B.TP(52MM).ROHM	
		ZD4	0DZ560009AA	DIODE ZENER	MTZ5.6B.TP(52MM).ROHM	
		ZD401	0DZ510009AB	DIODE ZENER	MTZ5.1B.TP(52MM).ROHM	
		ZD402	0DZ910009BA	DIODE ZENER	MTZ9.1B.TP(52MM).ROHM	
		ZD405	0DZ110009AA	DIODE ZENER	MTZ 11B.TP(52MM).ROHM	
		ZD406	0DZ110009AA	DIODE ZENER	MTZ 11B.TP(52MM).ROHM	
		ZD5	0DZ560009AA	DIODE ZENER	MTZ5.6B.TP(52MM).ROHM	
		ZD500	0DZ620009AA	DIODE ZENER	MTZ6.2B.TP(52MM).ROHM	
		ZD501	0DZ620009AA	DIODE ZENER	MTZ6.2B.TP(52MM).ROHM	
		ZD502	0DZ910009BA	DIODE ZENER	MTZ9.1B.TP(52MM).ROHM	
		ZD503	0DZ510009AB	DIODE ZENER	MTZ5.1B.TP(52MM).ROHM	
		ZD802	0ITI4310000	IC.TEXAS INSTRUMENT	TL431ILP LP003 VAR.ZENER	
		ZD901	0DZ120009AA	DIODE ZENER	Z12BM TA	
		ZD902	0DZ120009AA	DIODE ZENER	Z12BM TA	
		ZD903	0DZ120009AA	DIODE ZENER	Z12BM TA	
		ZD904	0DZ180009AA	DIODE ZENER	MTZ18B.TP(52MM).ROHM	
		Z110	166-018A	FILTER	SAW OFWK1950(SIEMENS)	
		Z151	166-002H	FILTER	SFE5.5MB-TF21 (TA)	
		Z152	166-002J	FILTER	SFE6.0MB-TF21 (TA)	
		Z153	166-002K	FILTER	SFE6.5MB-TF21 (TA)	
		Z154	166-031L	FILTER	TPS 5.5MB-TF21(TA)	
		Z155	166-228A	FILTER	CERAMIC TPW03B(5.5/6.0M)	
		Z156	166-120A	FILTER	FILTER CERAMIC TPS 4.5MW	
		Z157	166-003D	FILTER	SFE4.5MB-TF21	
		Z158	166-002J	FILTER	SFE6.0MB-TF21 (TA)	
		Z201	166-019A	FILTER	TRAP TPS4.43MJ	

*** END OF DATA ***

SCHEMATIC DIAGRAM PART NO.

484-828F

rd (Component side)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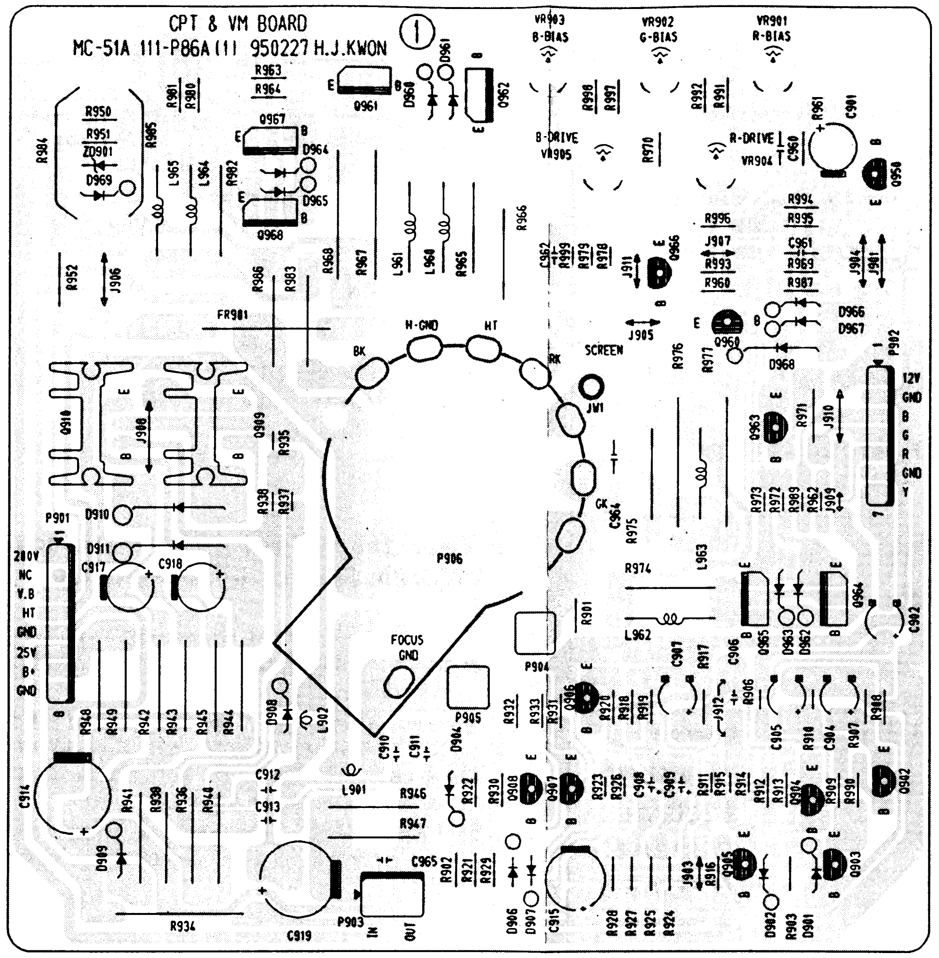
D-COIL
AC INPUT
HOT
COLD
HOT
COLD

CPT Printed Circuit Board (Component side)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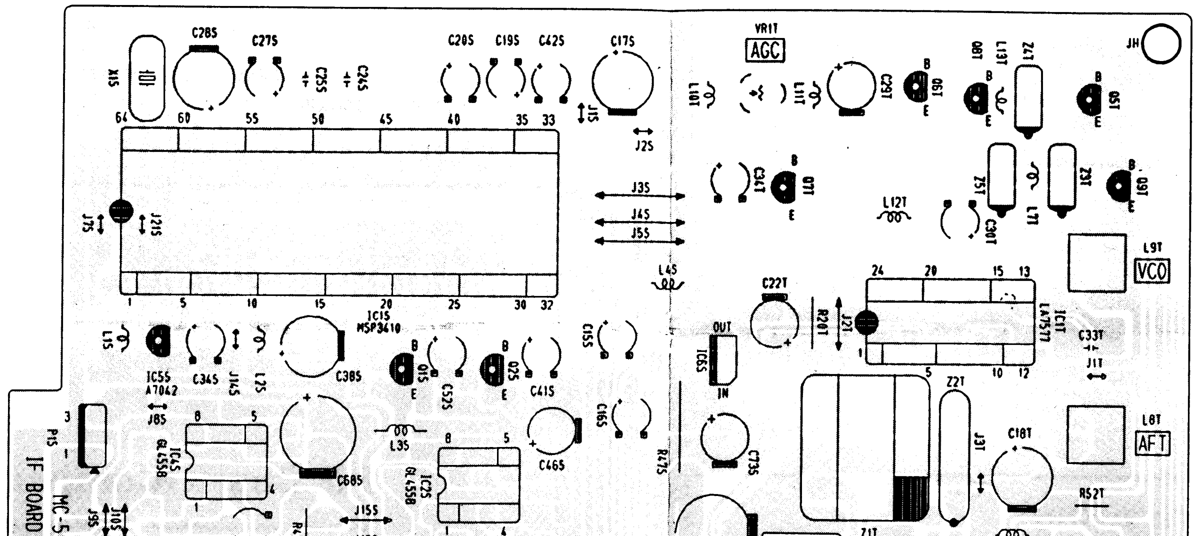
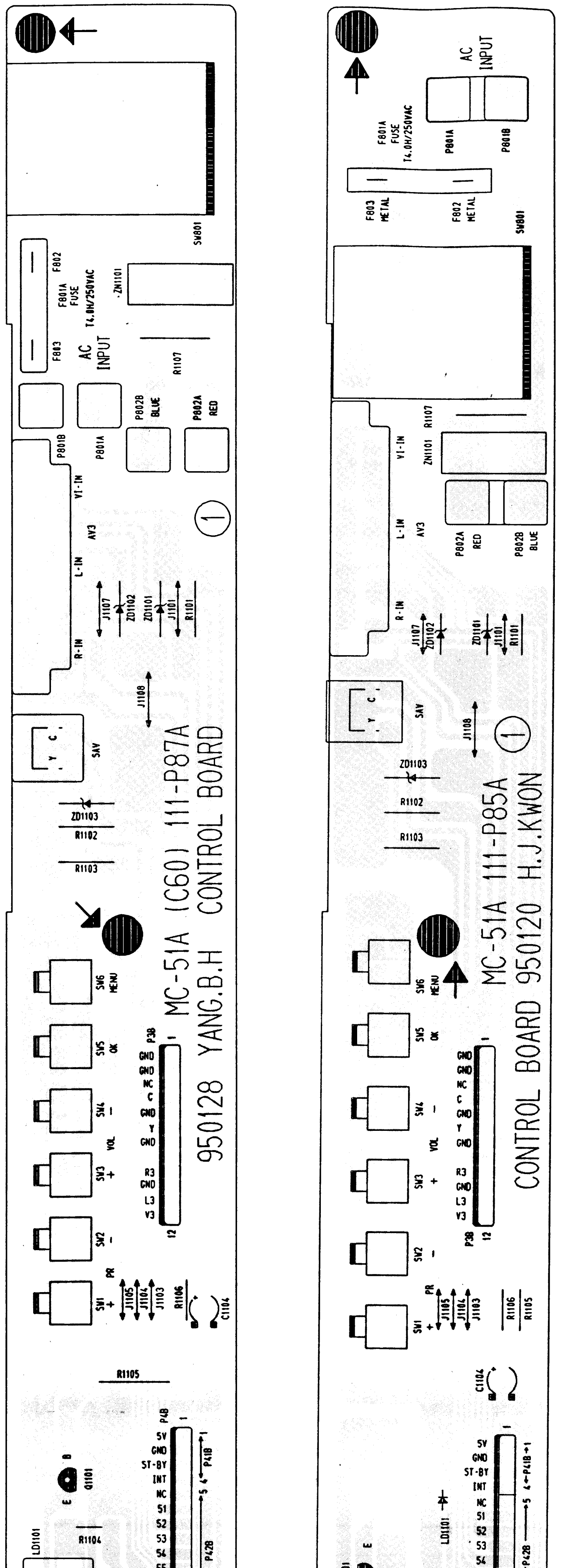
MC-51A 111-P86A (1) 950227 H.J.KWON
SCREEN
FOCUS
GND
H-GND

IF Printed Circuit Board (Component side)


IF BOARD
AGC
VCO
AFT

Control Printed Circuit Board (Component side)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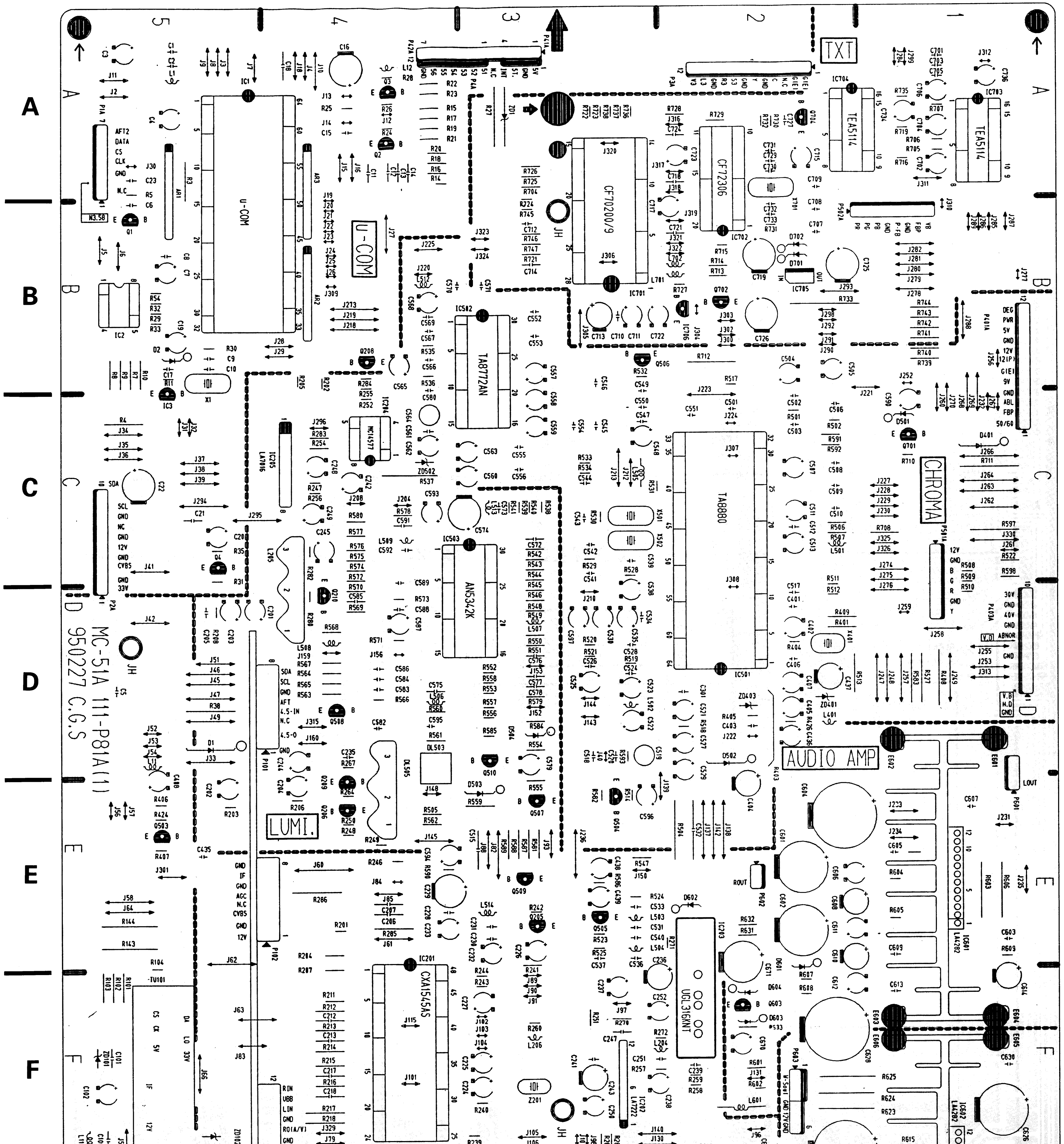
MC-51A (C60) 111-P87A CONTROL BOARD
950128 YANG.B.H
MC-51A 111-P85A
CONTROL BOARD 950120 H.J.KWON

Main Printed Circuit Board (Component Side)


A
B
C
D
E
F
1
2
3
4
5
TXT
U-COM
CF70200/9
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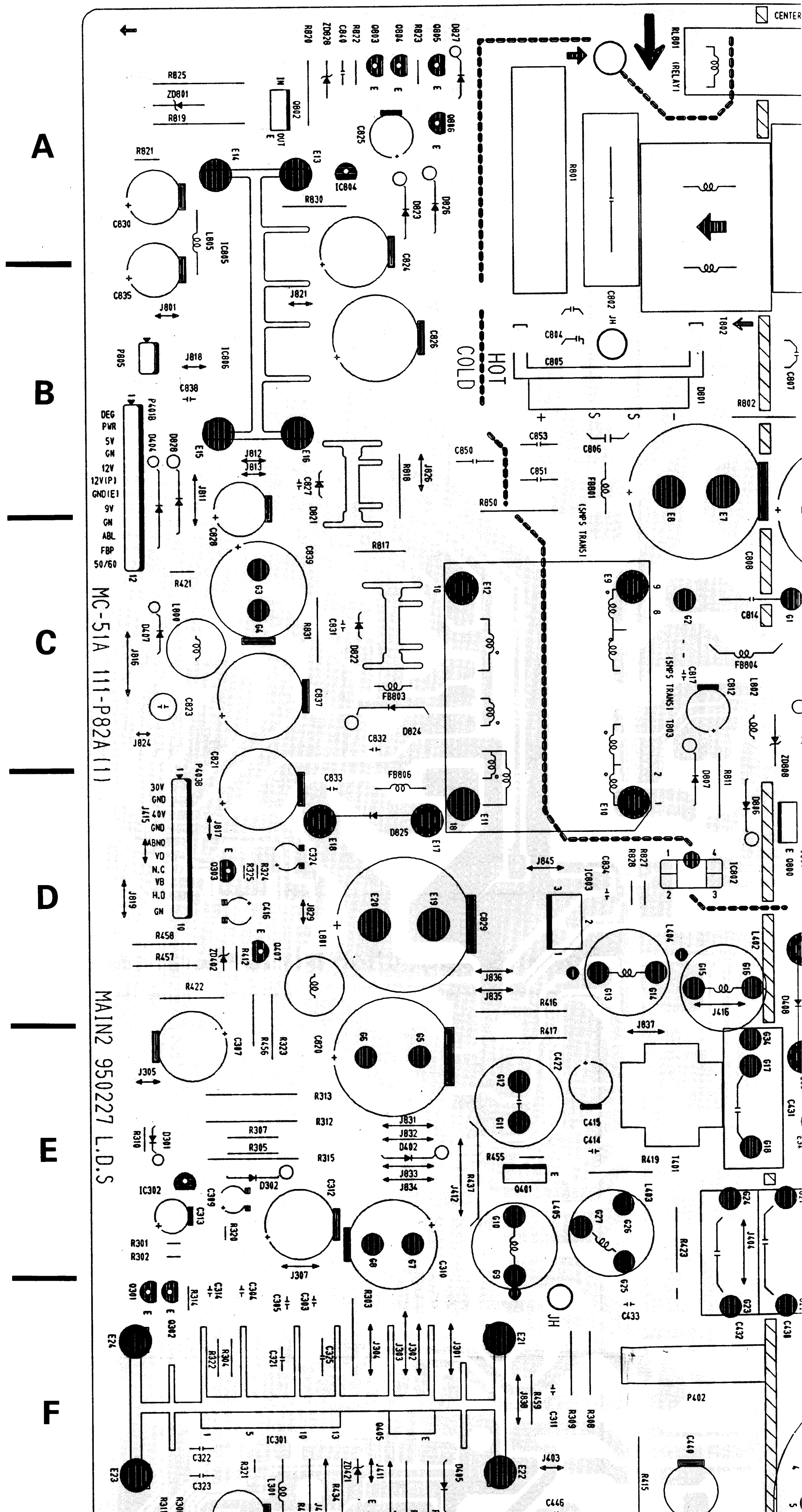
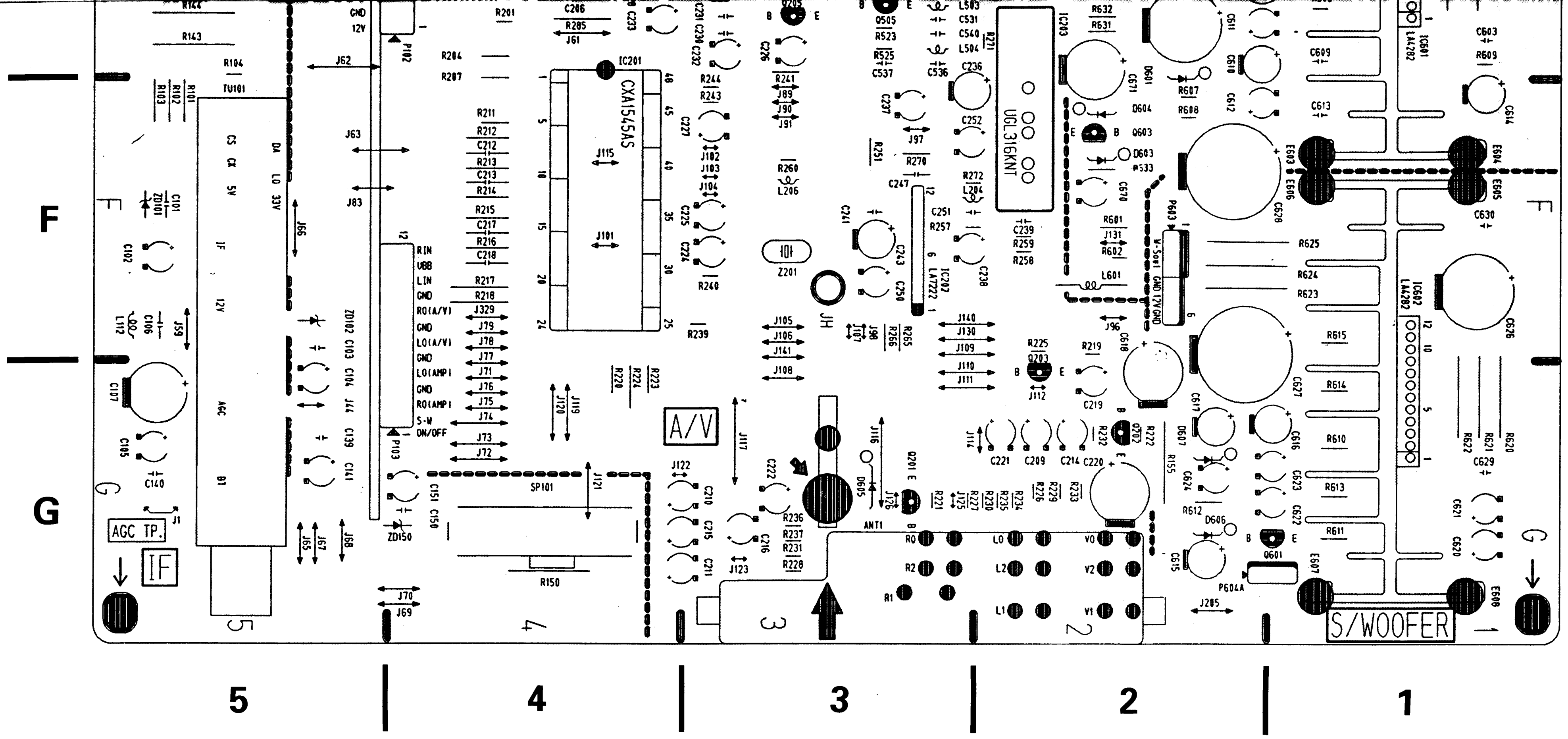
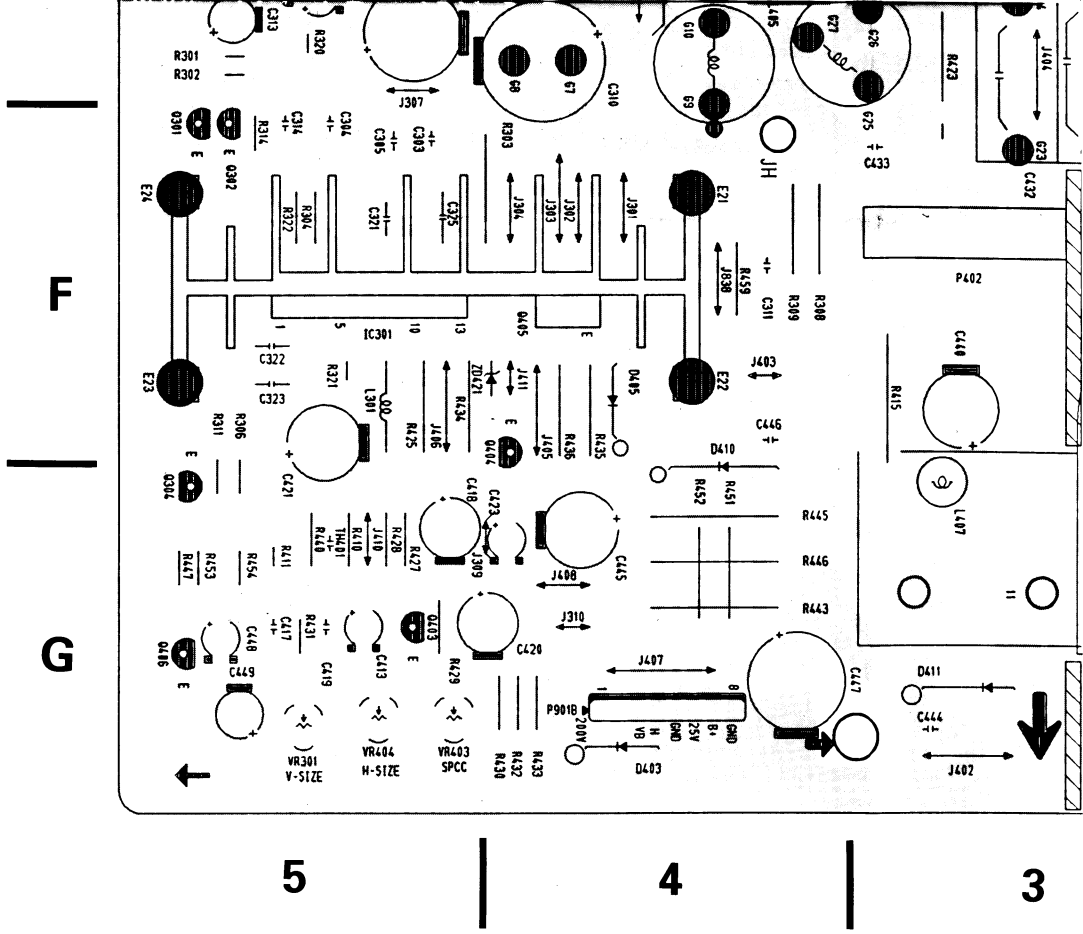
TA8772AN
TA8880
AN5342K
CHROMA
LUMI.
AUDIO AMP
CXA1545AS
UCL316NT
MC14577
LA7016
MC-51A 111-P81A(1)
950227 C.G.S

Main 2 Printed Circuit Board (Component side)


A
B
C
D
E
F
HOT
COLD
RL801 (RELAY)
CENTER
MC-51A 111-P82A(1)
MAIN2 950227 L.D.S
IC301
IC302





Component Location Guide for Main Board

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AR1	A5
AR2	B4
AR3	A4
C1	A5
C2	A5
C3	A5
C4	A5
C5	D5
C6	B5
C7	B5
C8	B5
C9	B5
C10	B5
C11	A4
C12	A4
C13	A4
C14	A4
C15	A4
C16	A4
C17	B5
C18	A4
C19	B5
C20	C5
C21	C5
C22	C5
C23	A5
C101	F5
C102	F5
C103	F5
C104	G5
C105	G5
C106	F5
C107	G5
C139	G5
C140	G5
C141	G5
C150	G5
C151	G5
C201	D5
C202	E5
C203	D5
C204	E4
C205	D5
C206	E4
C207	E4
C209	G2
C210	G3
C211	G3
C212	F4
C213	F4
C214	G2
C215	G3
C216	G3
C217	F4
C218	F4
C219	G2
C220	G2
C224	F3
C225	F3
C226	E3
C227	F3
C228	E4
C229	E4
C230	E3
C231	E3
C232	E3
C233	E4
C235	D4
C236	F3
C237	F3
C238	F3
C239	F2
C241	F3
C242	C4
C243	F3
C244	D4
C245	C4
C247	F3
C248	C4
C249	C4
C250	F3
C251	F3
C252	F3
C301	D2
C401	D2
C402	D2
C403	D2
C404	E2
C405	D2
C406	D2
C407	D2
C408	E5
C435	E5
C436	D2
C437	D2
C438	E3
C439	E3
C501	C2
C502	C2
C503	C2
C504	B2
C505	B2
C506	C2
C507	C2
C508	C2
C509	C2
C510	C2
C511	C2
C512	C2
C513	C2
C515	E3
C517	D2
C518	D3
C519	D3
C520	D3
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C524	D3
C525	D3
C526	D3
C527	D2
C528	D3
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C543	C3
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C545	C3
C546	C3
C547	C3
C548	C3
C549	C3
C550	C3
C551	C2
C552	B3
C553	B3
C554	C3
C555	C3
C556	C3
C557	B3
C558	C3
C559	C3
C560	C4
C561	C4
C562	C4
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C565	B4
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C568	B4
C569	B4
C570	B4
C571	B3
C572	C3
C573	C3
C574	C4
C575	D4
C576	D3
C577	D3
C578	D3
C579	D3
C580	B4
C584	D4
C585	D4
C586	D4
C587	D4
C588	D4
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C590	C1
C591	C4
C592	C4
C593	C4
C594	E4
C595	D4
C596	E3
C597	D3
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C602	E2
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C604	E2
C605	E1
C606	E2
C607	E1
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C609	E1
C610	E2
C611	E2
C612	F2
C613	F1
C614	F1
C615	G2
C616	G2
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C618	G2
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C622	G2
C623	G2
C624	G2
C626	F1
C627	F2
C628	F2
C629	G1
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C671	E2
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C703	A1
C704	A1
C705	A1
C706	A1
C707	B2
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C709	A2
C710	B3
C711	B3
C712	B3
C713	B3
C714	B3
C718	A3
C719	B2
C721	B3
C722	B3
C723	A2
C724	A3
C725	B2
C726	B2
C727	A2
C729	A2
C730	A2
C731	A2
C732	B2
C733	B2
C734	A1
C736	A1
D1	D5
D2	B5
D401	C1
D501	C1
D502	D2
D503	E3
D504	D3
D601	E2
D602	E2
D603	F2
D604	F2
D605	G3
D606	G2
D607	G2
D701	B2
D702	B2
DL503	E4
DL505	D4
E601	D1
E602	D1
E603	F1
E604	F1
E605	F1
E606	F1
E607	G1
E608	G1
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IC2	B5
IC3	C5
IC201	F4
IC202	F3
IC203	F2
IC204	C4
IC205	C4
IC501	D2
IC502	B4
IC503	C4
IC601	E1
IC602	G1
IC701	B3
IC702	B2
IC703	A1
IC706	B2
J1	G5
J2	A5
J3	A5
J4	A4
J5	B5
J6	B5
J7	A5
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J9	A5
J10	A4
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J12	A4
J13	A4
J14	A4
J15	A4
J16	A4
J18	A4
J19	B4
J20	B4
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J39	C5
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J41	C5
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J45	D5
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J137	E2
J138	E2
J139	D3
J140	F3
J141	F3
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J150	E3
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J153	D3
J156	D4
J159	D4
J160	D4
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J292	B2
J293	B2
J294	C5
J295	C5
J296	C4
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J300	B2
J301	E5
J302	B2
J303	B2
J304	B2
J305	B3
J306	B3
J307	C2
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J310	A1
J311	A1
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J319	B3
J320	A3
J321	B3
J322	B3
J323	B4
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J326	C2
J329	F4
J330	C1
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L11	D5
L12	A4
L112	F5
L204	F3
L205	C4
L206	F3
L401	D2
L501	C2
L502	D3
L503	E3
L504	E3
L505	C3
L508	D4
L509	C4
L512	B4
L513	C3
L514	E3
L601	F2
L701	B3
L702	B3
P101	D4
P102	E4
P103	G4
P601	E1
P602	E2
P603	F2
P1A	A5
P2A	D5
P3A	A2
P401A	C1
P403A	D1
P4A	A3
P501A	C1
P502A	B2
P604A	G2
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Q2	A4
Q3	A4
Q4	C5
Q201	G3
Q202	G2
Q203	G2
Q205	E3
Q206	E4
Q208	B4
Q209	E4
Q210	D4
Q503	E5
Q504	E3
Q505	E3
Q506	B3
Q507	E3
Q508	D4
Q509	E3
Q510	D3
Q601	G2
Q603	F2
Q701	C1
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R255	B4
R256	C4
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R260	F3
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R266	F3
R267	D4
R270	F3
R271	E3
R272	F3
R280	D4
R282	C4
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R284	B4
R285	E4
R286	E4
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R409	D2
R424	E5
R426	D2
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R502	C2
R504	E2
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R506	C2
R507	C2
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R512	D2
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R514	E3
R519	D3
R520	D3
R521	D3
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R570	D4
R571	D4
R572	C4
R573	D4
R574	C4
R575	C4
R576	C4
R577	C4
R580	C4
R581	E3
R582	E3
R583	D1
R584	D3
R585	D3
R586	E3
R587	E3
R588	E3
R589	E3
R590	E4
R591	C2
R592	C2
R593	D3
R597	C1
R598	C1
R601	F2
R602	F2
R603	E1
R604	E1
R605	E1
R606	E1
R607	F2
R608	F2
R609	E1
R610	G1
R611	G1
R612	G2
R613	G1
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R622	F1
R623	F2
R624	F2
R625	F2
R631	E2
R632	E2
R633	F2
R704	A3
R705	A1
R706	A1
R707	A1
R708	C2
R710	C1
R711	C1
R712	B2
R713	B2
R714	B2
R715	B2
R716	A1
R719	A1
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R722	A3
R723	A3
R724	B3
R725	A3
R728	A3
R729	A2
R730	A2
R731	B2
R732	A2
R733	B2
R735	A1
R736	A3
R737	A3
R738	A3
R739	B1
R740	B1
R741	B1
R742	B1
R743	B1
R744	B1
R745	B3
R746	B3
R747	B3
SP101	G4
TU101	G5
X1	B5
X401	D2
X501	C3
X502	C3
X701	A2
Z201	F3
ZD1	A3
ZD101	F5
ZD102	F5
ZD150	G4
ZD401	D2
ZD403	D2
ZD502	C4

C303	F5
C304	F5
C305	F5
C307	E5
C309	E5
C310	E4
C311	F4
C312	E5
C313	E5
C314	F5
C321	F5
C322	F5
C323	F5
C324	D5
C325	F5
C400	D2
C409	E2
C410	F2
C411	E2
C412	D2
C413	G5
C414	E4
C415	E4
C416	D5
C417	G5
C418	G5
C419	G5
C420	G5
C421	F5
C422	E4
C423	G4
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C425	E2
C430	F3
C431	E3
C432	F3
C433	F4
C440	F3
C441	G2
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C448	G5
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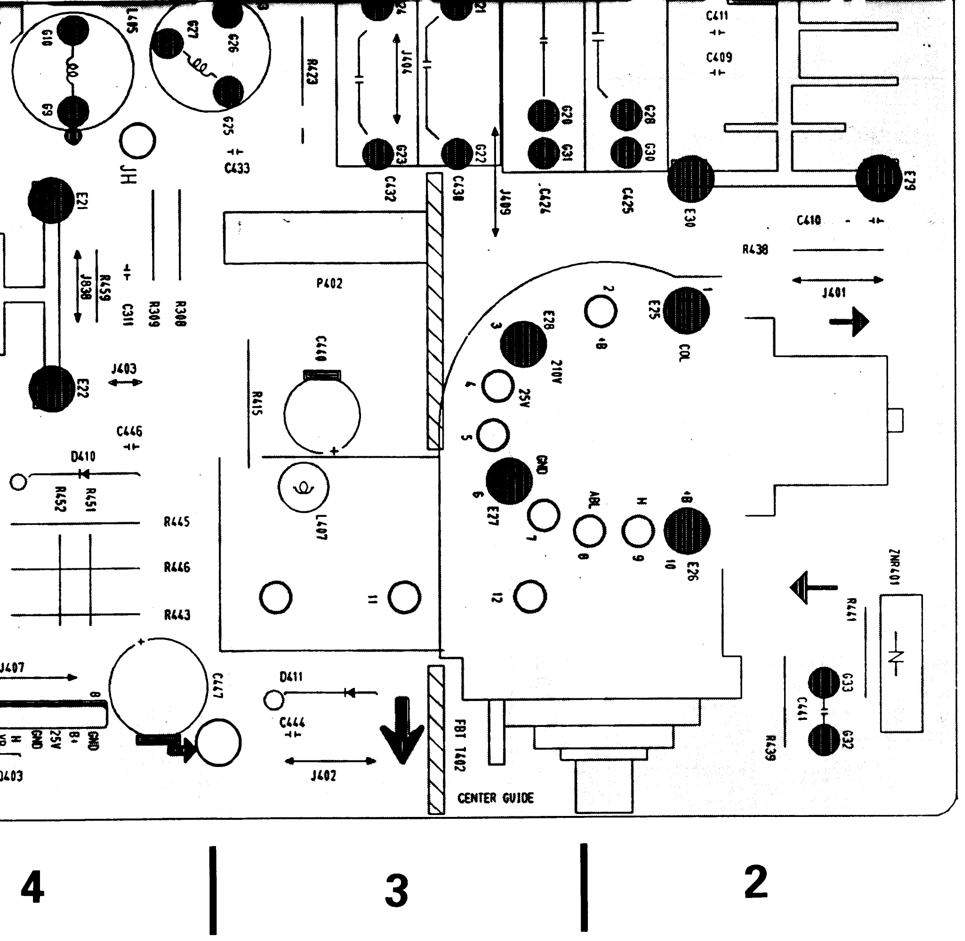
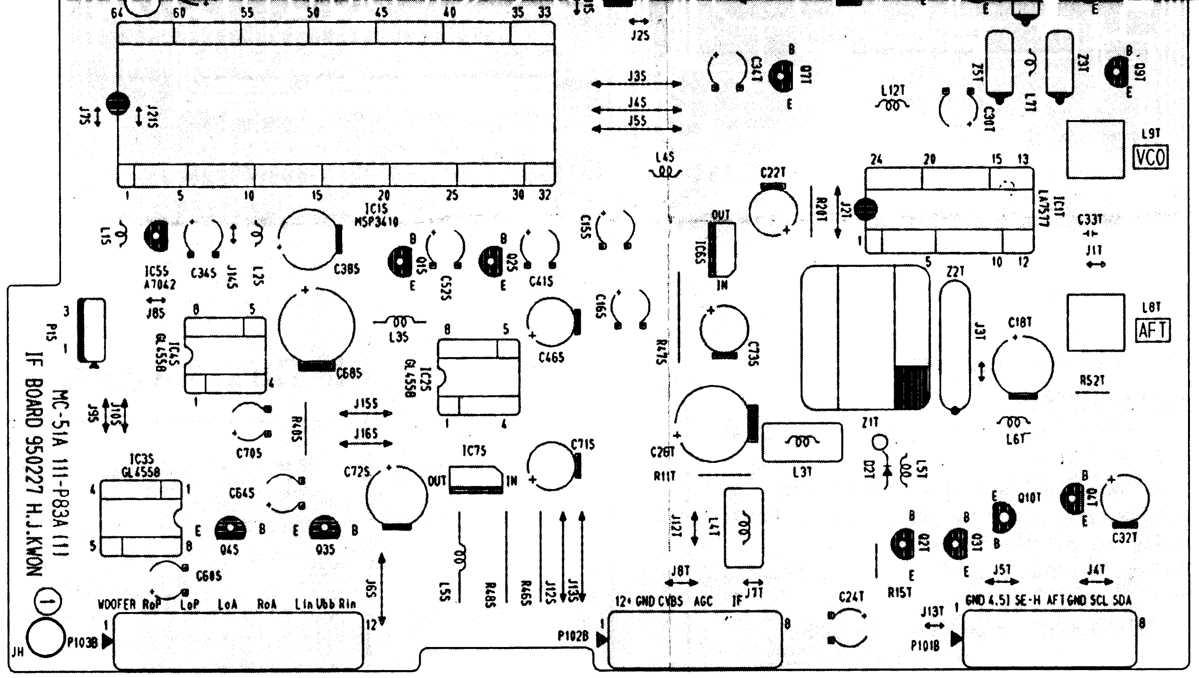
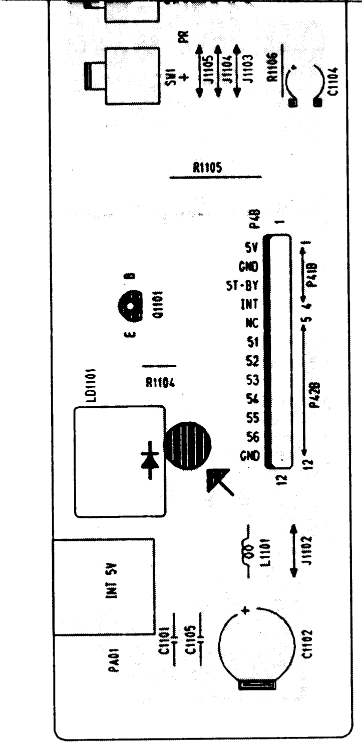
C801	A2


CENTER GUIDE
P402
FBT T402
4
3
2


MC-51A 111-P83A (1)
IF BOARD 950227 H.J.KWON
IC15 MSP3410
IC7T LA7577
VCO
AFT
WOOFER RoP LoP LoA RoA LinUbb Rin
12+ GND CVBS AGC IF
GND 4.5I SE-H AFT GND SCL SDA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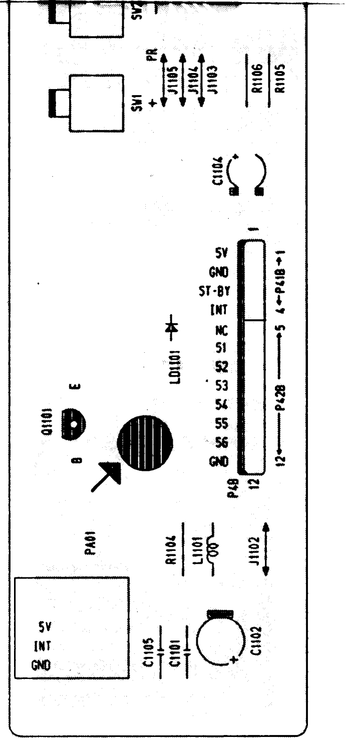
GND
ST-BY
INT
NC
S1
S2
S3
S4
S5
S6
GND
INT 5V

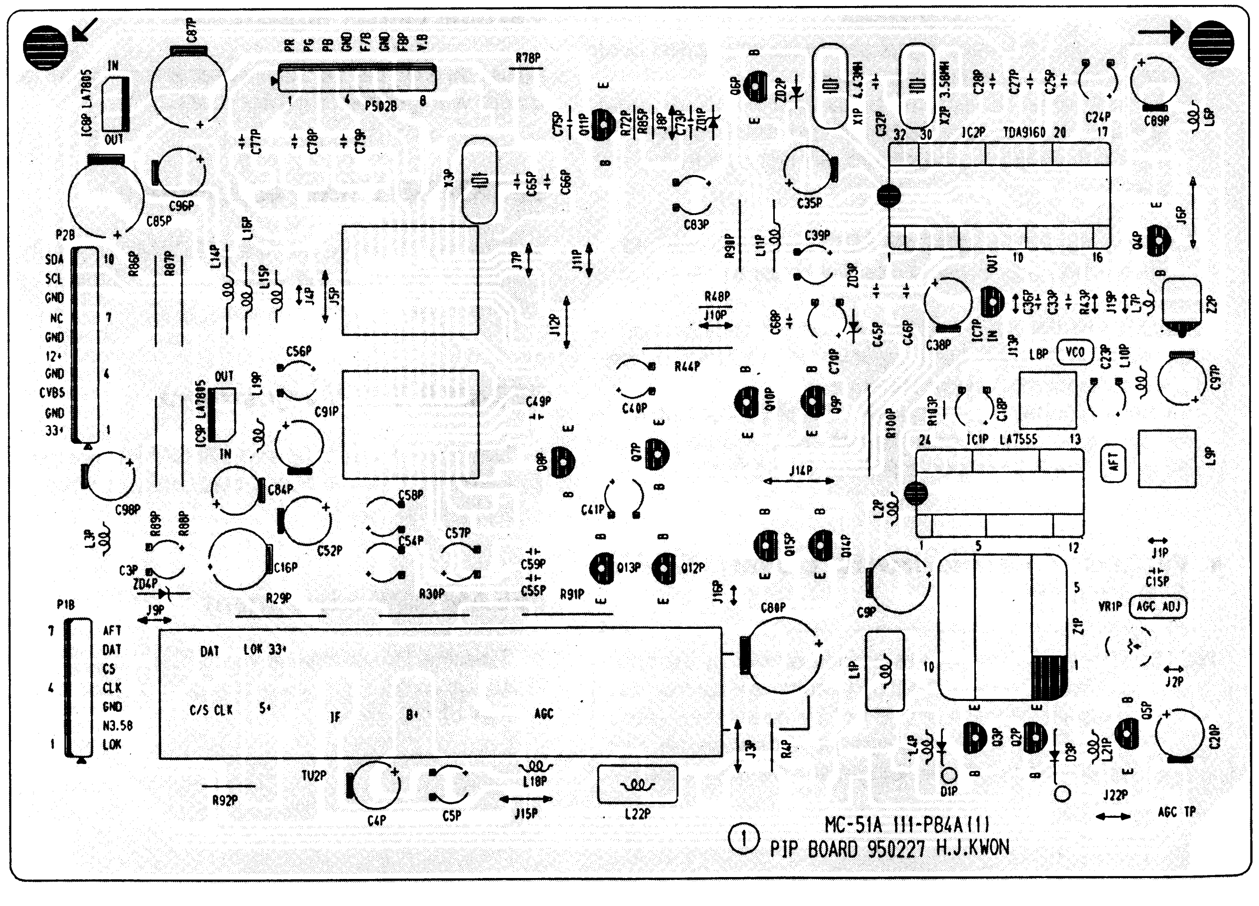

5V
GND
ST-BY
INT
NC
S1
S2
S3
S4
S5
S6
GND
5V
INT
GND

Component Location Guide for Main2 Board

D4	R708 C2
D4	R710 C1
D4	R711 C1
D4	R712 B2
D4	R713 B2
D4	R714 B2
D4	R715 B2
C4	R716 A1
D4	R719 A1
C4	R721 B3
C4	R722 A3
C4	R723 A3
C4	R724 B3
C4	R725 A3
E3	R728 A3
E3	R729 A2
D1	R730 A2
D3	R731 B2
D3	R732 A2
E3	R733 B2
E3	R735 A1
E3	R736 A3
E3	R737 A3
E4	R738 A3
C2	R739 B1
C2	R740 B1
D3	R741 B1
C1	R742 B1
C1	R743 B1
F2	R744 B1
F2	R745 B3
E1	R746 B3
E1	R747 B3
E1	SP101 G4
E1	TU101 G5
F2	X1 B5
F2	X401 D2
E1	X501 C3
G1	X502 C3
G1	X701 A2
G2	Z201 F3
G1	ZD1 A3
G1	ZD101 F5
F1	ZD102 F5
F1	ZD150 G4
F1	ZD401 D2
F1	ZD403 D2
F2	ZD502 C4
F2	
F2	
E2	
E2	
F2	
A3	
A1	
A1	
A1	

C303	F5	C802	A4	D802	B2	FB801	B4	J304	F4	L405	E4	R321	F5	R806	B2
C304	F5	C804	B4	D803	C2	FB802	C3	J305	E5	L407	G3	R322	F5	R807	B2
C305	F5	C805	B4	D806	D3	FB803	C4	J307	E5	L800	C5	R325	D5	R808	C3
C307	E5	C806	B4	D807	C3	FB804	C3	J309	G4	L801	D5	R400	D2	R809	C3
C309	E5	C807	B3	D808	C3	FB806	D4	J310	G4	L802	C3	R410	G5	R810	C3
C310	E4	C808	B3	D821	B5	G1	C3	J401	F2	L805	A5	R411	G5	R811	D3
C311	F4	C809	C3	D822	C4	G2	C3	J402	G3	P402	F3	R412	D5	R812	D3
C312	E5	C810	C2	D823	A4	G3	C5	J403	F4	P803	A2	R415	F3	R813	D3
C313	E5	C811	D2	D824	C5	G4	C5	J404	E3	P804	A2	R416	D4	R814	C3
C314	F5	C812	C3	D825	D5	G5	E4	J405	F4	P805	B5	R417	E4	R815	C3
C321	F5	C816	A2	D826	A4	D6	E4	J406	F5	P401B	B5	R419	E4	R816	D3
C322	F5	C817	C3	D827	A4	G7	E4	J407	G4	P403B	D5	R421	C5	R817	C5
C323	F5	C818	A2	D828	B5	G8	E4	J408	G4	P803B	A2	R422	D5	R820	A5
C324	D5	C820	E4	E1	B2	G9	F4	J409	F3	P804B	A2	R423	F3	R821	A5
C325	F5	C821	D5	E2	B2	G10	E4	J410	G5	P901B	G4	R425	F5	R822	A4
C400	D2	C823	C5	E3	D2	G11	E4	J411	F4	Q301	F5	R427	G5	R823	A4
C409	E2	C824	A4	E4	D2	G12	E4	J412	E4	Q032	F5	R428	G5	R825	A5
C410	F2	C825	A4	E5	C3	G13	D4	J415	D5	Q303	D5	R429	G5	R827	D3
C411	E2	C826	B4	E6	C3	G14	D3	J416	D3	Q304	G5	R430	G4	R828	D3
C412	D2	C827	B5	E7	B3	G15	D3	J801	B5	Q401	E4	R431	G5	R830	A5
C413	G5	C828	B5	E10	D3	G16	D3	J804	D2	Q402	E2	R432	G4	R831	C5
C414	E4	C829	D4	E11	D4	G17	E3	J805	A2	Q403	G5	R433	G4	R850	B4
C415	E4	C830	A5	E12	C4	G18	E3	J806	B2	Q404	F4	R434	F5	RL801	A3
C416	D5	C831	C5	E13	A5	G19	E3	J807	D3	Q406	G5	R435	F4	T401	E3
C417	G5	C832	C4	E14	A5	G20	F3	J811	B5	Q407	D5	R436	F4	T402	F3
C418	G5	C833	D5	E15	B5	G21	E3	J812	B5	Q800	D3	R437	E4	T801	A3
C419	G5	C834	D4	E16	B5	G22	F3	J813	B5	Q801	D3	R438	F2	T802	A3
C420	G5	C835	B5	E17	D4	G23	F3	J814	B3	Q802	A5	R439	G2	T803	C4
C421	F5	C837	C5	E18	D5	G24	E3	J815	A3	Q803	A4	R440	G5	T804	A2
C422	E4	C838	B5	E19	D4	G25	E4	J816	C5	Q804	A4	R441	G2	TH401	A5
C423	G4	C839	C5	E20	D4	G28	F2	J817	D5	Q805	A4	R443	G4	TH801	A3
C424	E3	C840	A5	E21	F4	G29	E2	J818	B5	Q806	A4	R445	G4	VR301	G5
C425	E2	C850	B4	E22	F4	G30	F2	J819	D5	R301	E5	R446	G4	VR403	G5
C430	F3	C851	B4	E23	F5	G31	F3	J821	B5	R302	E5	R447	G5	VR404	G5
C431	E3	C853	B4	E24	F5	G32	G2	J824	C5	R303	F5	R451	G4	ZD402	D5
C432	F3	D301	E5	E25	F2	G33	G2	J826	B4	R304	F5	R452	G4	ZD421	F5
C433	F4	D302	E5	E26	G2	G34	E3	J829	D5	R305	E5	R453	G5	ZD801	A5
C440	F3	D402	E4	E27	G3	G35	A2	J831	E4	R306	F5	R454	G5	ZD808	D3
C441	G2	D403	G4	E28	F3	IC301	F5	J832	E4	R307	E5	R455	E4	ZD809	D2
C442	D3	D404	B5	E29	F2	IC302	E5	J833	E4	R308	F4	R457	D5	ZD828	A5
C443	D3	D405	F4	E30	F2	IC801	C2	J836	D4	R309	F4	R457	D5	ZNR401	G2
C444	G3	D406	E2	E31	D2	IC802	D3	J837	E4	R310	E5	R458	D5		
C445	G4	D407	C5	E32	D2	IC803	D4	J838	F4	R311	F5	R459	F4		
C446	F4	D408	E3	E33	E2	IC804	A5	J845	D4	R312	E5	R801	A4		
C447	G4	D409	E2	E34	E3	IC805	A5	L301	F5	R313	E5	R802	B3		
C448	G5	D410	G4	E35	E3	J301	F4	L402	D3	R314	F5	R803	B3		
C449	G5	D411	G3	E36	D3	J302	F4	L403	E4	R315	E5	R804	B2		
C801	A2	D801	B4	FB400	E2	J303	F4	L404	D4	R320	E5	R805	B2		

PIP Printed Circuit Board (Component side)-OPTION


MC-51A 111-P84A (1)
PIP BOARD 950227 H.J.KWON
IC2P TDA9160
IC1P LA7555
IC8P LA7805
IC9P LA7805
VCO
AFT
AGC ADJ
AGC TP
SDA
SCL
GND
NC
GND
12+
GND
CVBS
GND
33+
AFT
DAT
CS
CLK
GND
N3.58
LOK
DAT LOK 33+
C/S CLK 5+ IF B+ AGC
TU2P

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position
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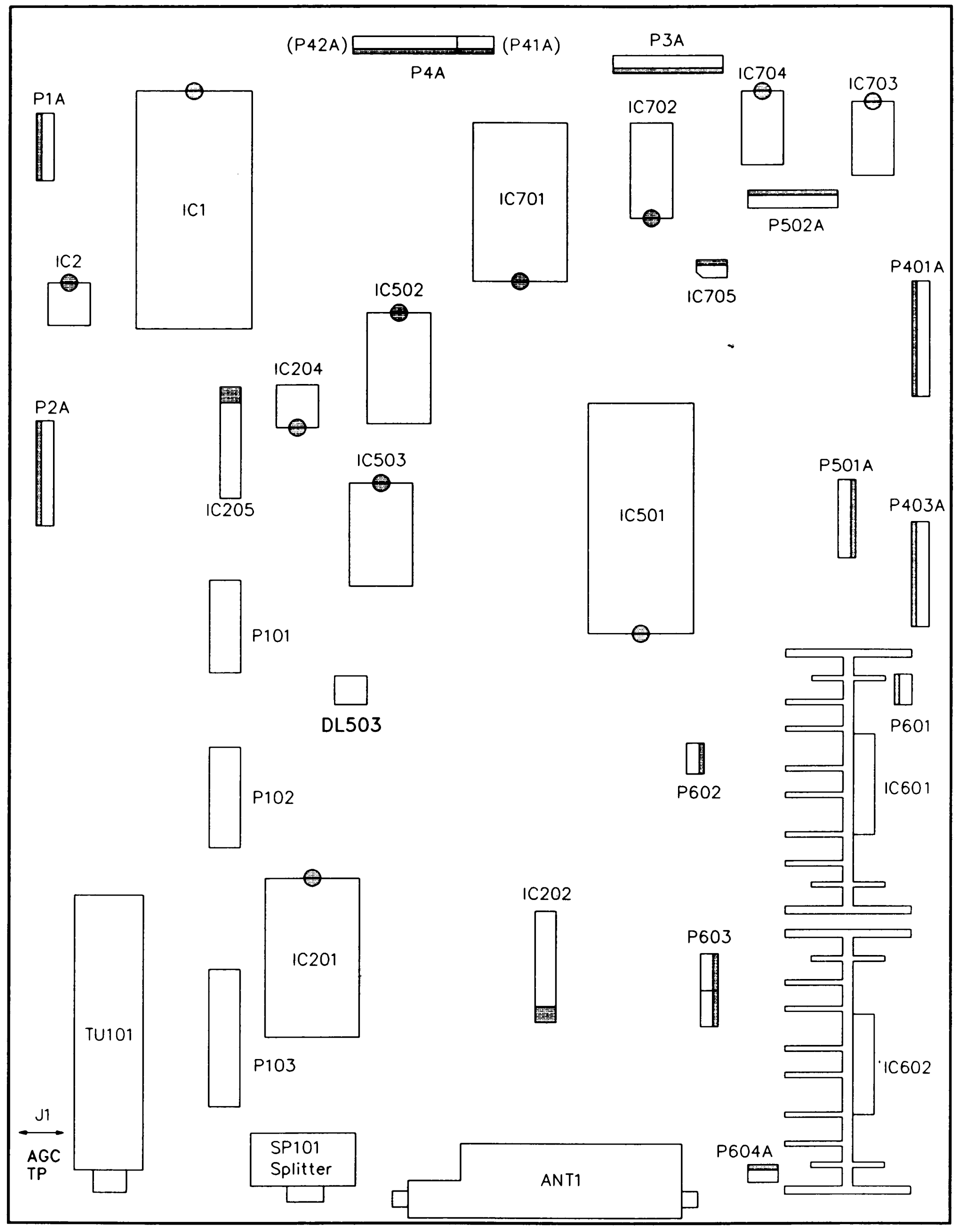
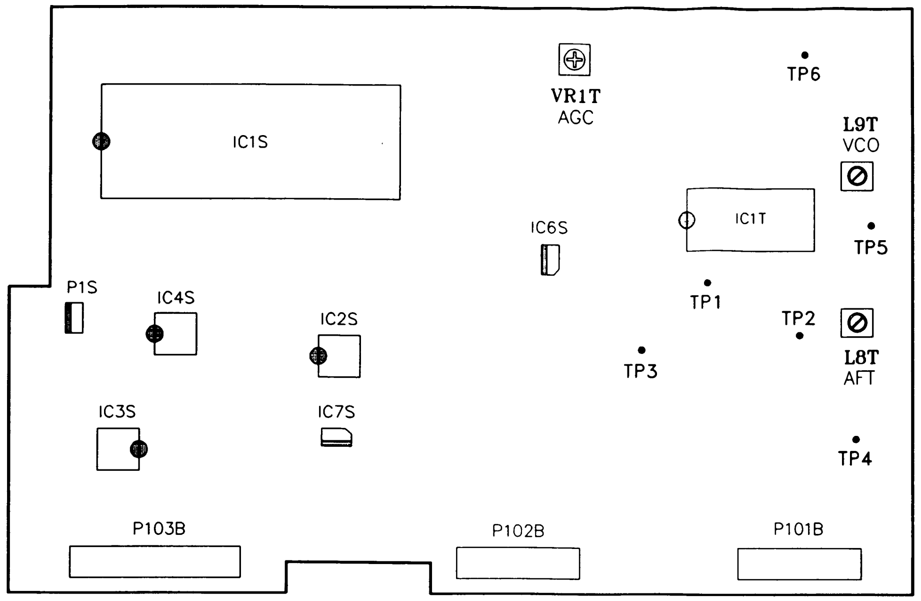
ALIGNMENT/TEST POINT LOCATION GUIDE

Main Board(Component side)

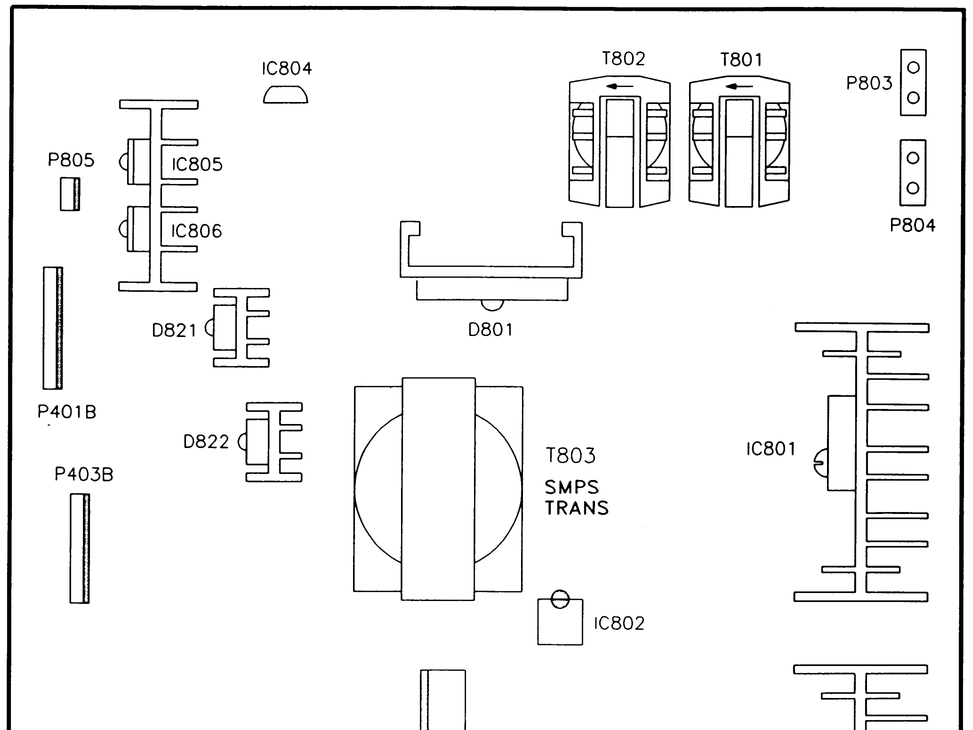

(P42A)
P4A
(P41A)
P3A
IC704
IC703
IC702
P1A
IC1
IC701
P502A
IC2
IC502
IC705
P401A
IC204
P2A
IC205
IC503
IC501
P501A
P403A
P101
DL503
P601
P102
P602
IC601
IC202
IC201
P603
TU101
P103
IC602
J1
AGC
TP
SP101
Splitter
ANT1
P604A

IF Board (Component side)

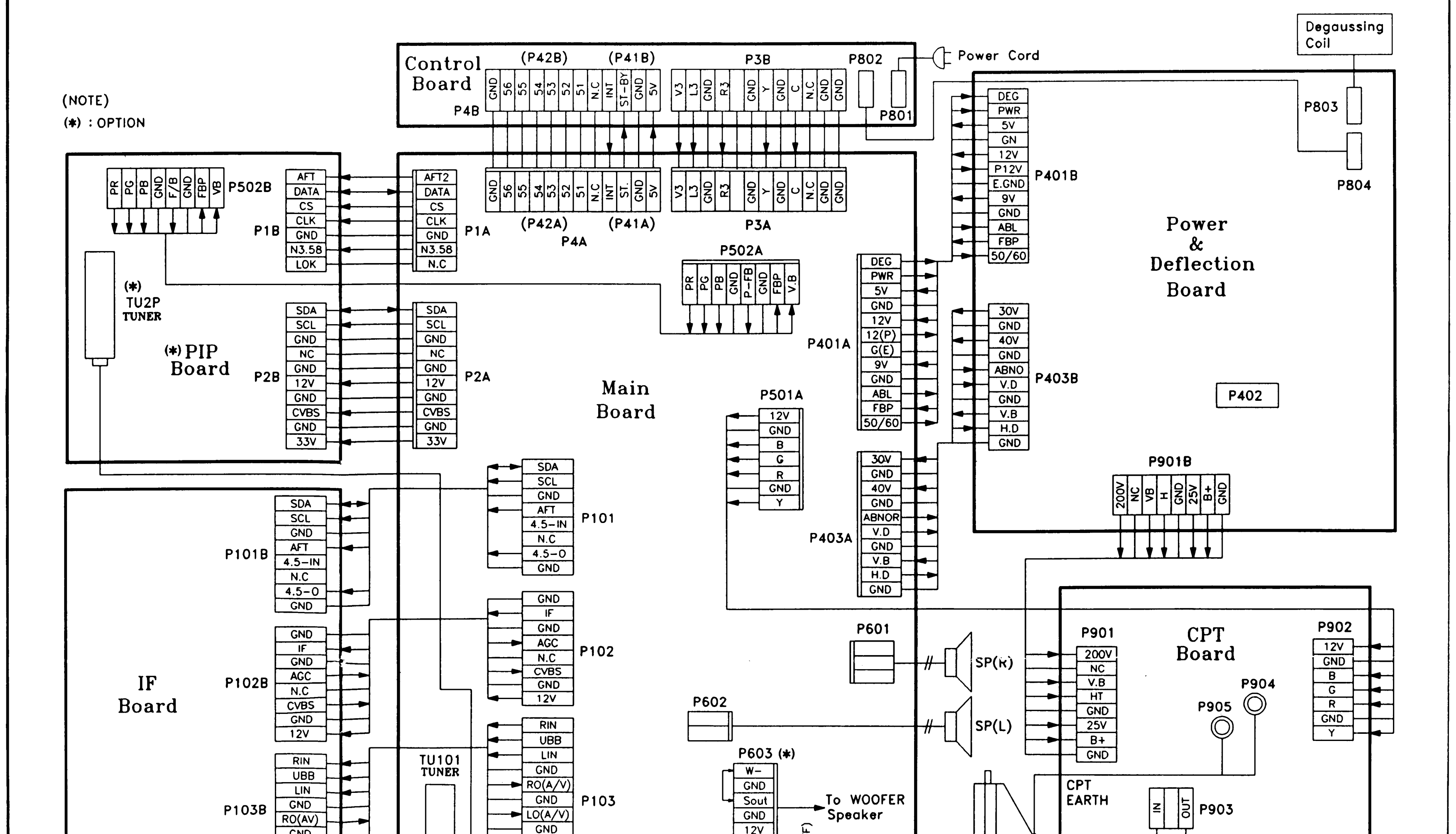

VR1T
AGC
TP6
L9T
VCO
IC1S
IC6S
IC1T
TP5
P1S
IC4S
TP1
IC2S
TP2
L8T
AFT
TP3
IC3S
IC7S
TP4
P103B
P102B
P101B

NOTE : TP point is on the copper side.

Power & Deflection Board (Component side)


IC804
T802
T801
P803
P805
IC805
IC806
P804
D821
D801
P401B
D822
T803
SMPS
TRANS
IC801
P403B
IC802

CONNECTION DIAGRAM


(NOTE)
(*) : OPTION
Control Board
P4B
(P42B)
(P41B)
GND 56 55 54 53 52 51 N.C INT ST-BY GND 5V
P3B
V3 L3 GND R3 GND Y GND C N.C GND GND
P802
P801
Power Cord
Degaussing Coil
GND 56 55 54 53 52 51 N.C INT ST. GND 5V
(P42A)
(P41A)
P4A
V3 L3 GND R3 GND Y GND C N.C GND GND
P3A
(*) PIP Board
(*) TU2P TUNER
P502B
PR PG PB GND F/B GND FBP VB
P1B
AFT DATA CS CLK GND N3.58 LOK
P1A
AFT2 DATA CS CLK GND N3.58 N.C
P2B
SDA SCL GND NC GND 12V GND CVBS GND 33V
P2A
SDA SCL GND NC GND 12V GND CVBS GND 33V
Main Board
P502A
PR PG PB GND P-FB GND FBP V.B
P401A
DEG PWR 5V GND 12V 12(P) G(E) 9V GND ABL FBP 50/60
P401B
DEG PWR 5V GN 12V P12V E.GND 9V GND ABL FBP 50/60
P501A
12V GND B G R GND Y
P403A
30V GND 40V GND ABNOR V.D GND V.B H.D GND
P403B
30V GND 40V GND ABNO V.D GND V.B H.D GND
Power & Deflection Board
P803
P804
P402
P901B
200V NC VB H GND 25V B+ GND
IF Board
P101B
SDA SCL GND AFT 4.5-IN N.C 4.5-O GND
P101
SDA SCL GND AFT 4.5-IN N.C 4.5-O GND
P102B
GND IF GND AGC N.C CVBS GND 12V
P102
GND IF GND AGC N.C CVBS GND 12V
P103B
RIN UBB LIN GND RO(AV) GND
P103
RIN UBB LIN GND RO(A/V) GND LO(A/V) GND
TU101 TUNER
P601
P602
SP(R)
SP(L)
P603 (*)
W- GND Sout GND 12V
To WOOFER Speaker
CPT Board
P901
200V NC V.B HT GND 25V B+ GND
P902
12V GND B G R GND Y
P905
P904
CPT EARTH
IN OUT
P903

ADJUSTMENT INSTRUCTIONS

■ Alignment procedures

1. It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances. But this is changeable in view of productivity.
5. Unless other-wise noted, set the line voltage to 230V ± 10%, 50hz.

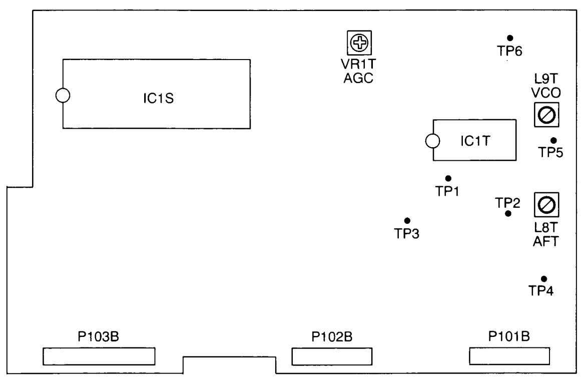
■ Test Equipment required

1. VIF sweep generator
2. Color bar/cross-hatch pattern generator
3. DC power supply
4. Digital multi-meter
5. Color analyzer

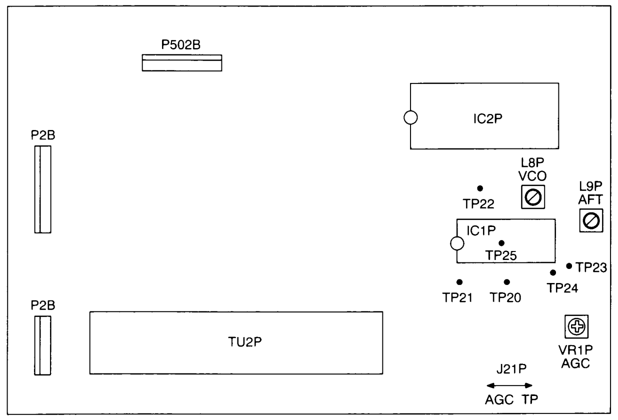
Preparation for VCO & AFT Adjustment

1. Connect the measuring equipment to the TV as shown in Fig.1
2. Set RF output level of Sweep S.G (Signal Generator) to 80dBuV.
3. Set Alignment Scope, Volts/Div to 100mV (VCO) or 1V(AFT), AC/DC switch to AC, Line/Ext switch to Ext.

IF Board (Component side view)



PIP Board (Component side view)



NOTE: TP point is on the copper side of PCB.

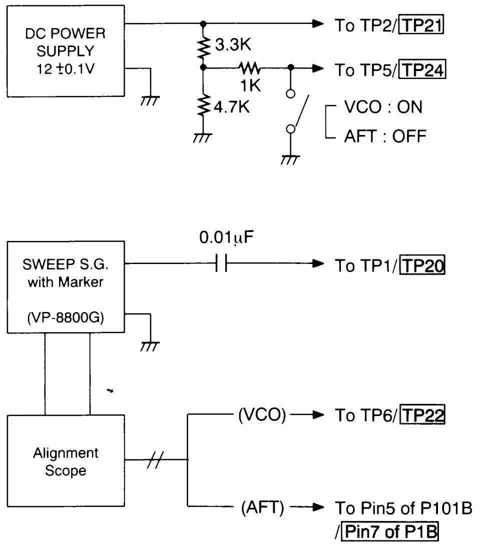


Fig.1: Connection Diagram of Equipment for VCO & AFT Adjustment.

NOTE:

☐ :PIP Board (Only 2 TUNER PIP Model)

● VCO (Voltage Controlled Oscillator) Adjustment

Test Point:	TP6 / TP22
Adjust:	L9T / L8P

1) Turn on DC power supply.
2) Adjust Video Detector Coil (L9T / L8P) so that a waveform on Alignment Scope is the same as below Fig.2.

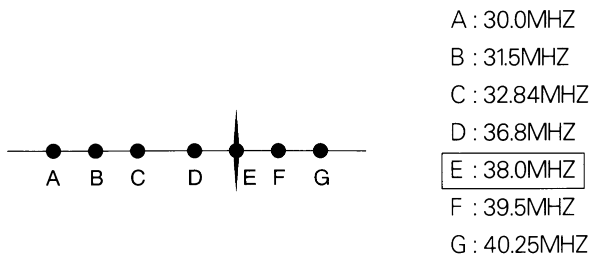


Fig.2: VCO waveform on Alignment Scope

● AFT(Auto Fine Tuning) Adjustment

Test Point:	PIN5 of P101B / PIN7 of P1B
Adjust:	L8T / L9P

1) Turn on DC power supply.
2) Adjust IF AFT coil (L8T / L9P) so that 38.0 MHz (Vc) point will be center as Fig.3.

SUB BRIGHT/TINT adjustment

NOTE: This adjustment should be performed after White Balance adjustment.

1) Tune the TV set to receive a broadcasting signal.
2) Adjust so that the brightness/TINT is optimum condition on the screen.

NOTE: If press OK button on Control Board continuously and press continually two times yellow button on remote controller then you can find On Screen Display as follow Fig.5.

※ Never change these data, these are important reference data for TV.

[LINE SVC2]	PR1
PEAK LIMITER	OFF
P/N GP	INITIAL
SECAM GP	INITIAL
P/N AMP	0
AV-IN VOL	050
FM PRESCALE	028
NICAM VOL	108
SCART VOL	040

Fig.5

● Vertical Height (VH)/Horizontal Width (HW)/Pin Cushion (PC) Adjustment

1) Tune the TV set to receive a digital pattern.
2) Set contrast to 100%, brightness and color to 50% individually.
3) Adjust VR301(VH) so that the circle of the digital pattern may be located within the effective screen of the CPT.
4) Adjust VR404(HW) so that the circle of the digital pattern looks like exact circle.
5) Adjust VR403(PC) so that the outermost left and right vertical line looks like parallel with vertical lines of the CPT.

● Screen & White Balance (color temperature) Adjustment

NOTE: This adjustment should be performed after warming up for 15 minutes at least.

Test Point:	Observing Display
Adjust:	Screen Control of FBT VR901, 902, 903 (Low Light) VR904, 905 (High Light)

1) Set VR901, 902, 903, 904, 905 on CPT Board to the mechanical center position.
2) Tune the TV set to receive white pattern of PAL standard signal.
3) Press OK button on Control Board continuously and blue button on remote controller for obtaining a horizontal line on the middle of CPT.
4) Turn the screen control of FBT counter-clockwise and set it to the minimum position.
5) Turn the screen control of FBT clockwise slowly to appear a horizontal line.
6) Adjust Cut-off volume(VR901, 902, 903) so that the horizontal line may become white.
   First, except the appeared color on the horizontal line with one volume and then make to be white line with the other two volume.
7) Turn the Screen control counter-clockwise for the horizontal line to be just cut-off.
8) Press OK button.
9) With a color analyer (white balance checker), adjust VR904 and VR905 on the CPT Board to set X position to 272±8 and Y position to 279±8 (color temperature is 12000° ±800° K) at the high light (45ft.L).
10) Control contast and brightness to be 4.5ft.L color temparature, and adjust VR901 and VR903 so that the screen may become white.
11) By varing contrast and brightness, whether you have good adjustment in high and low light areas on the screen.
   If not, re-adjust above setp 3)~10).

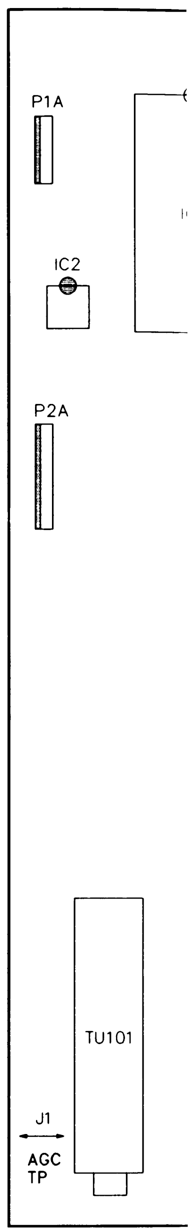
● Focus Adjustment

NOTE: This adjustment should be performed after warming up for 10 minutes.

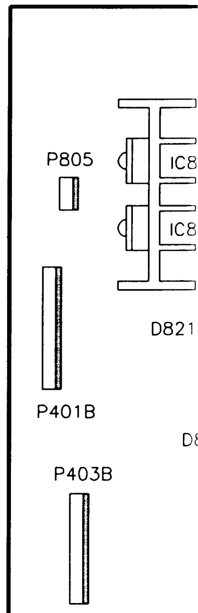
Test Point:	Observing Display
Adjust:	Focus control of FBT

1) Set color to minimum, brightness and contrast to maximum individually.
2) Tune the TV set to an inactive channel station (snow condition).
3) Adjust the Focus control for best overall focus.

Main Boa



Power & D



Adjustment procedures

1) Tune the TV set to receive a digital pattern unless

PIP Board (Component side)-OPTION

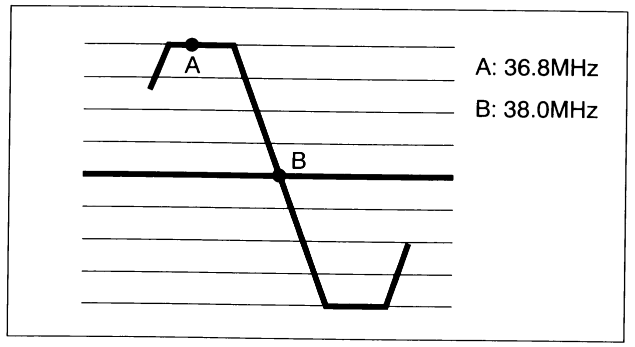


Fig.3: AFT waveform on Alignment Scope

• RF AGC (Auto Gain Control)Adjustment

Test Point: J1(on Main Board) / J22P

Adjust: VR1T / VR1P

The RF AGC control (VR1T/ VR1P) was aligned at the time of manufacture for optimum performance over a wide range conditions. Readjust of VR1T/ VR1P should not be necessary unless unusual local conditions exist, such as:

1) Channel interference in a CATV system.
2) Picture bending and/or color beats, which are unusually due to excessive RF signal input when the receiver is too close to a transmitting tower or when the receiver is connected to an antenna distribution system where the RF signal has been amplified.
   In this case, the input signal should be attenuated (with pad or filter) to a satisfactory level.
3) Picture noise caused by "broadcast noise" or weak signal. If the broadcast is "clean" and the RF signal is at least 1mV (60dBuV), the picture will be noise free in any area.

Adjusting the VR1T/ VR1P (RF AGC) control to one end of rotation will usually cause a relatively poor signal to noise ratio;
Adjusting to the other end of rotation will usually cause a degradation of over load capabilities resulting in color beats or adjacent channel reference.
For best results, adjust the VR1T/ VR1P control while performing on all over local channels, or the voltage at J1 / J22P will be 5.5±0.1Vdc in RF level 60±1dBuV.

• Vertical center/Horizontal center/ SECAM Adjustment

NOTE: These adjustments are already aligned at the time of manufacture for optimum performance. Readjust of them should not be necessary unless IC2(EEPROM) is defective. Because all the information of these adjustment are memorized in that IC.

Adjustment procedures

1) Tune the TV set to receive a digital pattern unless otherwise noted.
2) Press OK button on Control Board continuously and yellow button on remote controller then you can find On Screen Display. (Refer to the following Fig.4).
3) Press PR+ or PR- button for desirous function adjustment.
4) Press VOL+ or VOL- button for correct picture.
5) Press OK button to memorize all the adjusted data.

```
[LINE SVC1]                PR1

H-CENT              11
V-CENT              02
SUB   BRIGHT        10
SUB   TINT          10
SECAM  BELL         04
SECAM  R-Y          08
SECAM  B-Y          14
SECAM  AMP          02
```

Fig.4

Horizontal center adjustment

Adjust so that the horizontal center line of digital pattern is in accord with geometric horizontal center of the CPT.

Vertical center adjustment

Adjust so that the vertical center line of digital pattern is in accord with geometric center of the CPT.

SECAM BELL filter adjustment

1) Tune the TV set to receive a SECAM digital pattern.
2) Adjust so that the color on the 3.8MHz pattern is minimized.

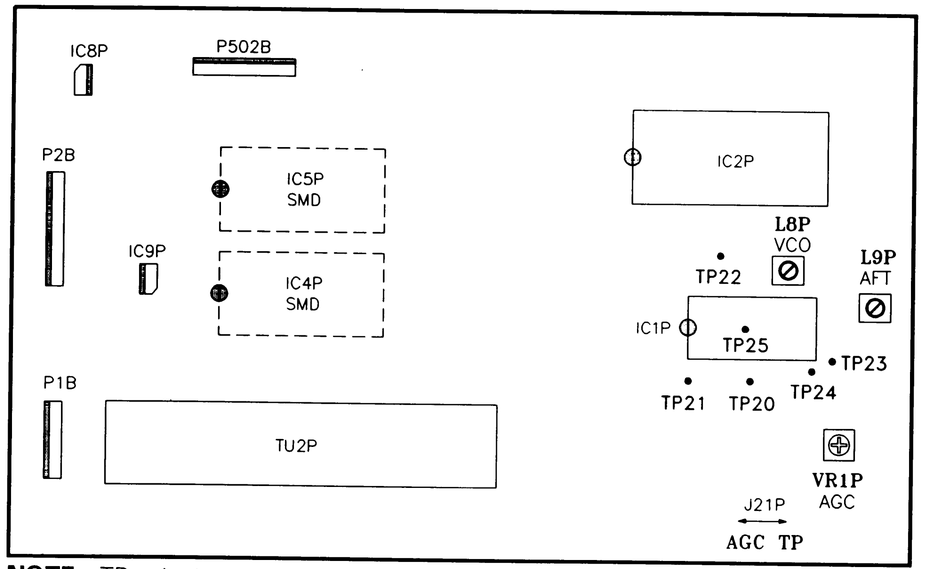
SECAM B-Y/R-Y adjustment

1) Tune the TV set to receive a SECAM digital pattern.
2) Adjust so that the background color is equal to the PAL background color.

SECAM AMP adjustment

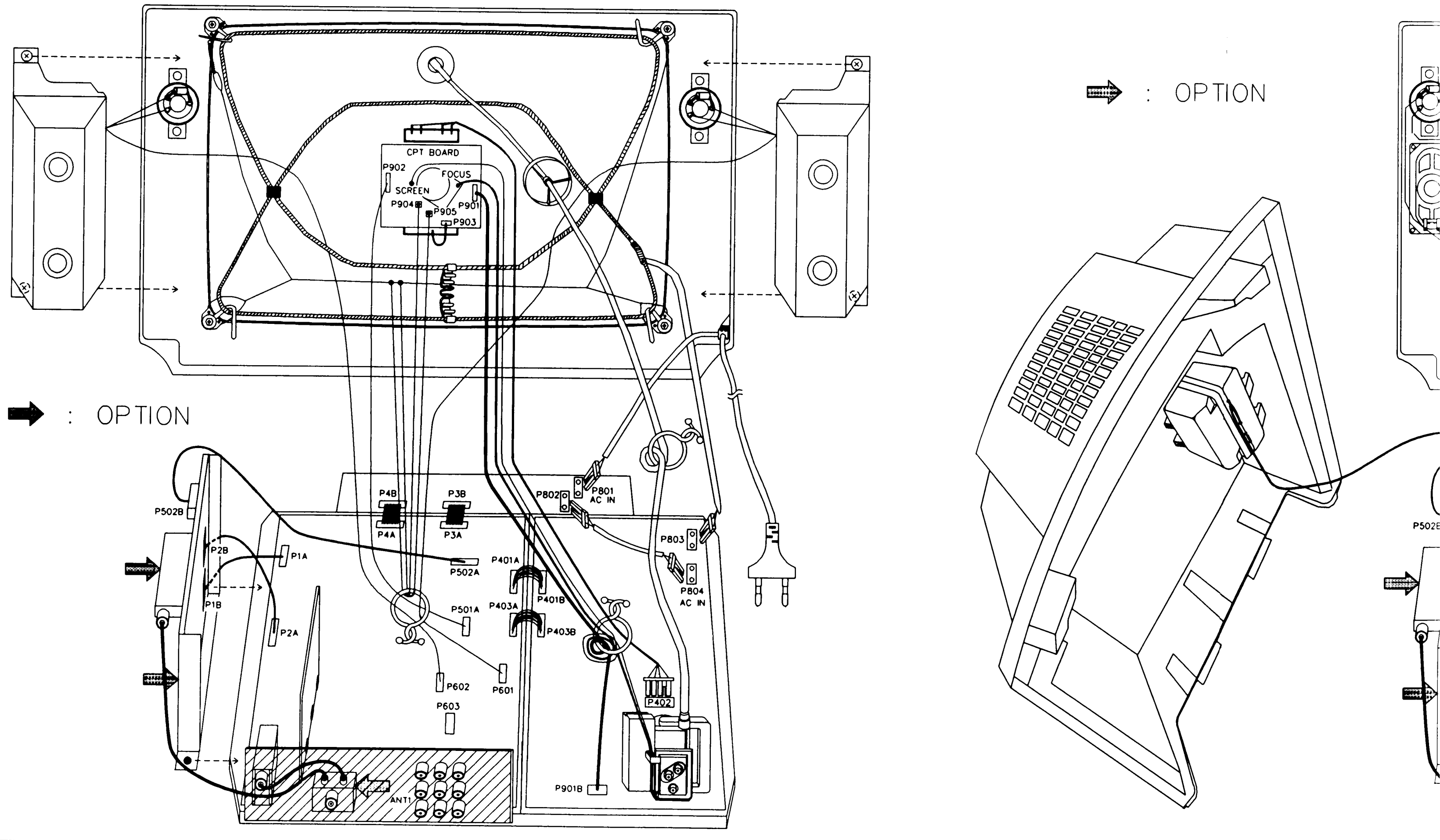
1) Tune the TV set to receive a SECAM digital pattern.
2) Adjust so that the level of SECAM color is equal to the level of PAL color.

PIP Board (Component side)-OPTION


IC8P
P502B
P2B
IC5P
SMD
IC9P
IC4P
SMD
IC2P
L8P
VCO
L9P
AFT
TP22
IC1P
TP25
TP23
P1B
TP21
TP20
TP24
TU2P
VR1P
AGC
J21P
AGC TP

NOTE : TP point is on the copper side.

WIRING DIAGRAM


➡ : OPTION
➡ : OPTION
CPT BOARD
P902
FOCUS
SCREEN
P904
P905
P901
P903
P4B
P4A
P3B
P3A
P802
P801
AC IN
P502B
P2B
P1A
P502A
P401A
P803
P1B
P2A
P501A
P403A
P401B
P403B
P804
AC IN
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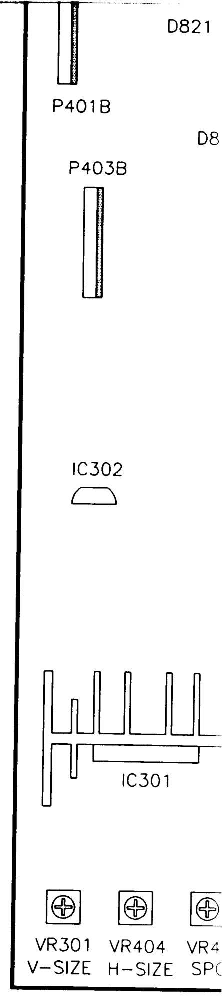
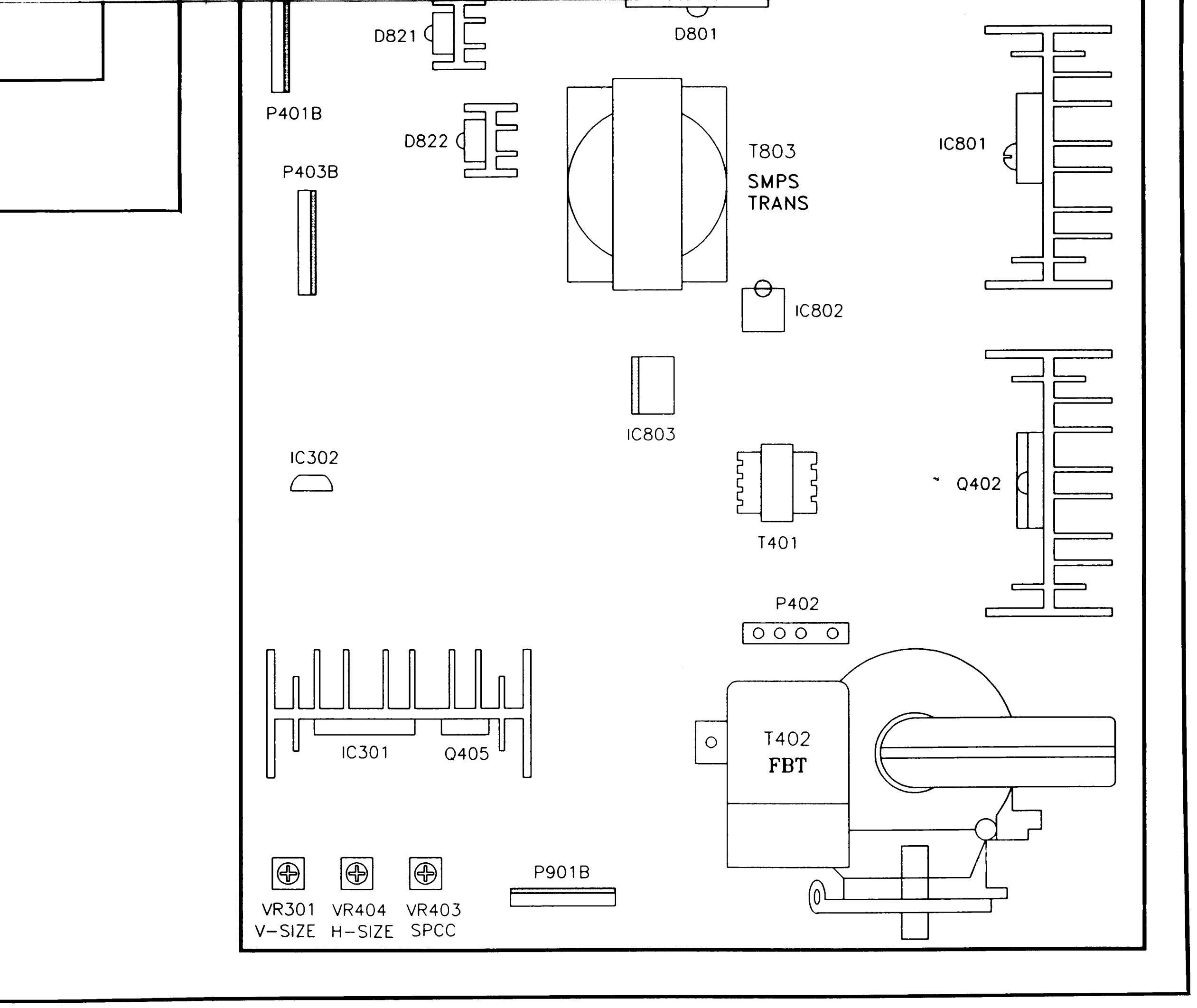
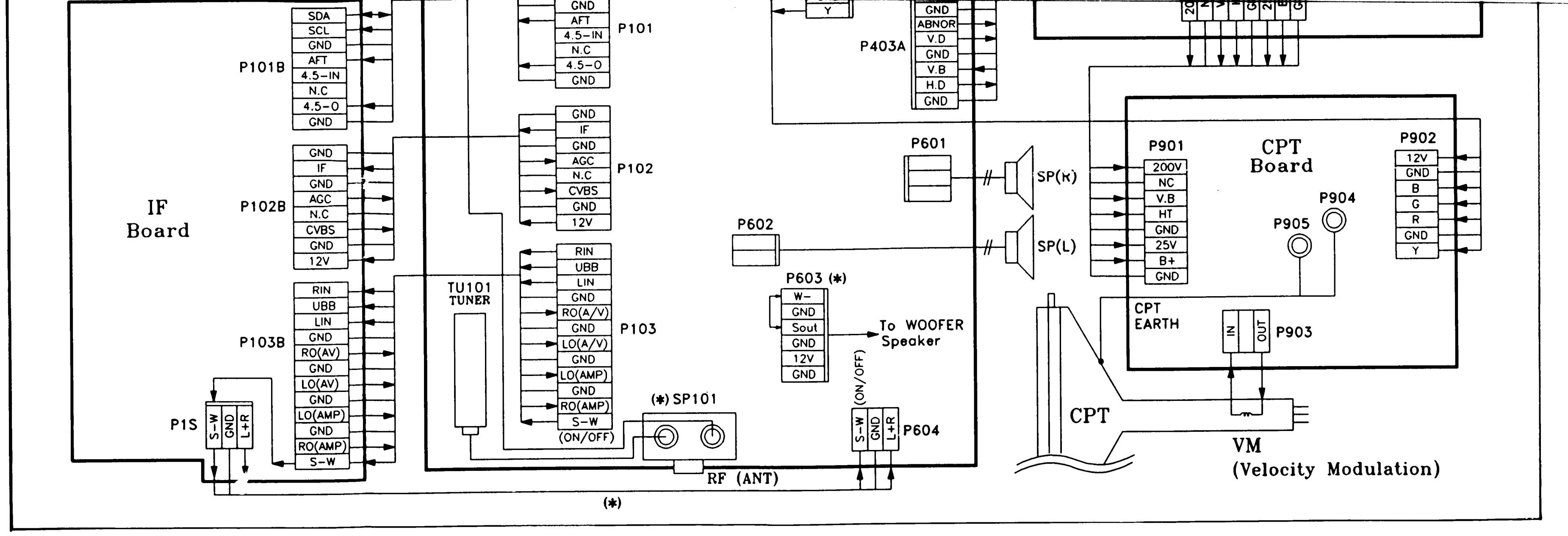
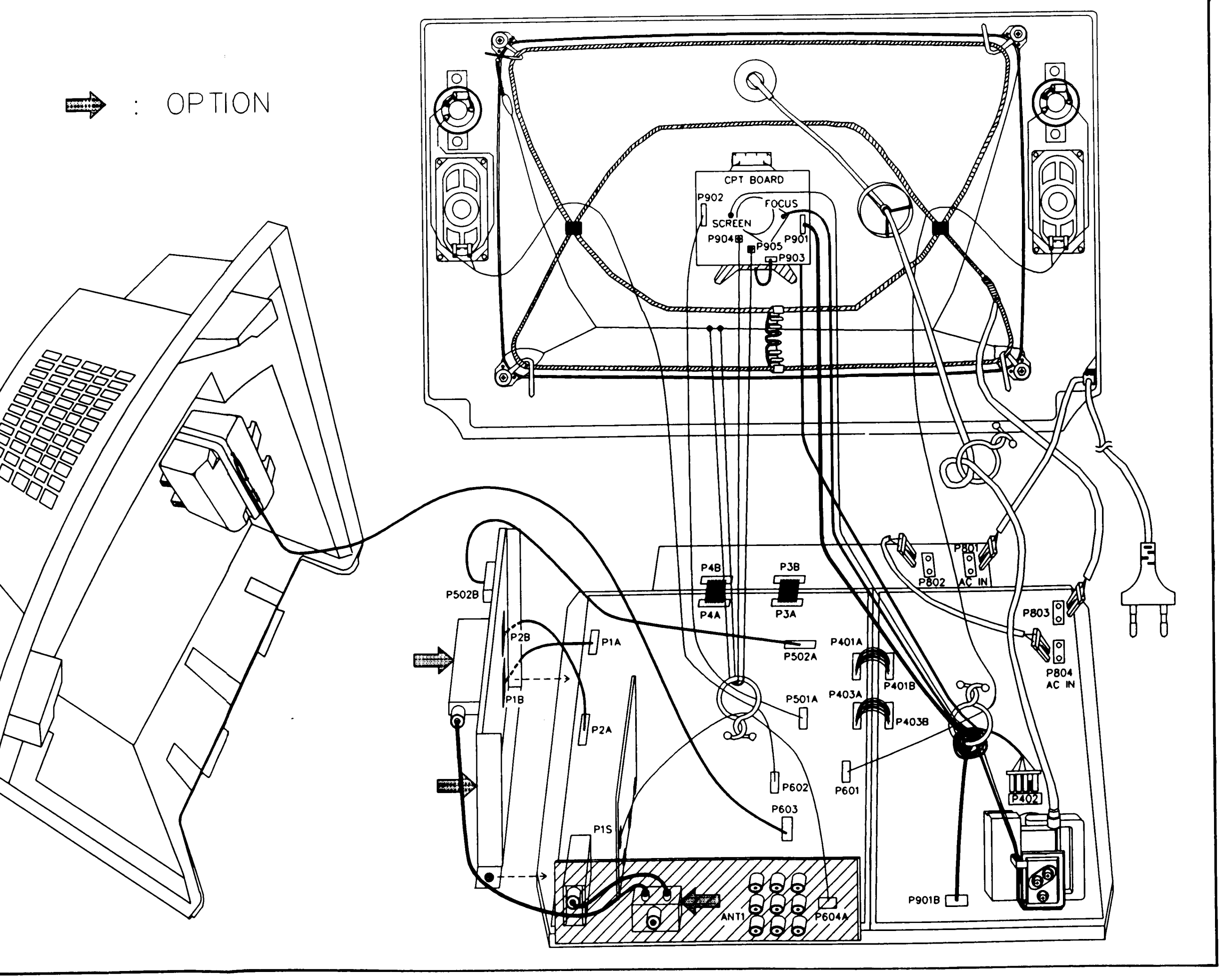
P603
P402
ANT1
P901B
P502B

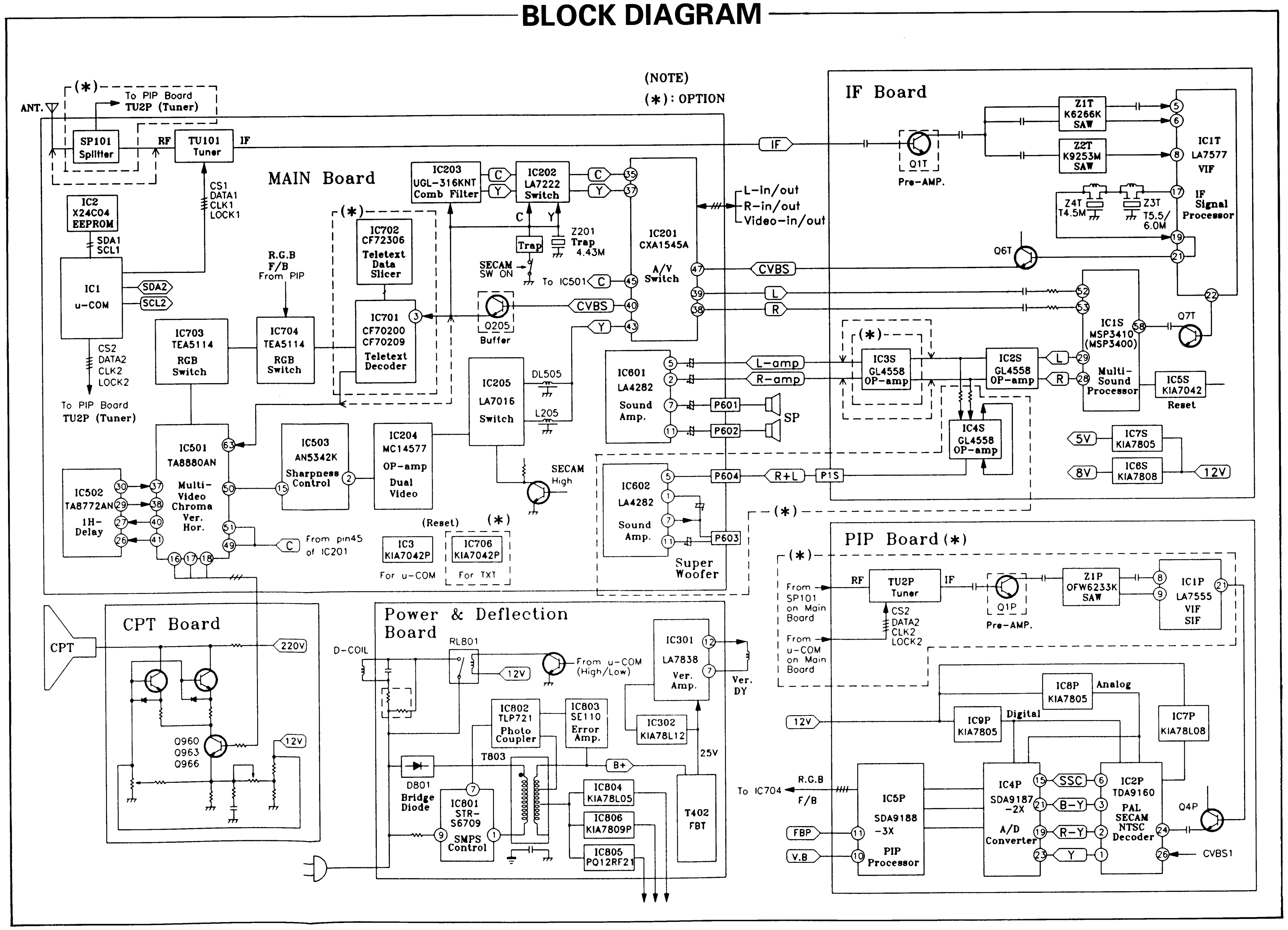

D821
P401B
D8
P403B
IC302
IC301
VR301
V-SIZE
VR404
H-SIZE
VR4
SP


D821
D801
P401B
D822
T803
SMPS
TRANS
IC801
P403B
IC802
IC803
IC302
Q402
T401
P402
IC301
Q405
T402
FBT
P901B
VR301
V-SIZE
VR404
H-SIZE
VR403
SPCC


IF
Board
P101B
SDA
SCL
GND
AFT
4.5-IN
N.C
4.5-O
GND
P102B
GND
IF
GND
AGC
N.C
CVBS
GND
12V
P103B
RIN
UBB
LIN
GND
RO(AV)
GND
LO(AV)
GND
LO(AMP)
GND
RO(AMP)
S-W
P1S
S-W
GND
L+R
P101
GND
AFT
4.5-IN
N.C
4.5-O
GND
P102
GND
IF
GND
AGC
N.C
CVBS
GND
12V
TU101
TUNER
P103
RIN
UBB
LIN
GND
RO(A/V)
GND
LO(A/V)
GND
LO(AMP)
GND
RO(AMP)
S-W
(ON/OFF)
(*) SP101
RF (ANT)
(*)
P403A
Y
GND
ABNOR
V.D
GND
V.B
H.D
GND
P601
P602
P603 (*)
W-
GND
Sout
GND
12V
GND
To WOOFER
Speaker
(ON/OFF)
S-W
GND
L+R
P604
SP(R)
SP(L)
P901
200V
NC
V.B
HT
GND
25V
B+
GND
CPT
Board
P902
12V
GND
B
G
R
GND
Y
P904
P905
CPT
EARTH
IN
OUT
P903
CPT
VM
(Velocity Modulation)


⇨ : OPTION
CPT BOARD
P902
SCREEN
FOCUS
P904
P905
P901
P903
P502B
P2B
P1A
P1B
P2A
P4B
P4A
P3B
P3A
P502A
P501A
P401A
P403A
P401B
P403B
P802
AC IN
P803
P804
AC IN
P602
P601
P603
P402
P1S
ANT1
P604A
P901B

BLOCK DIAGRAM

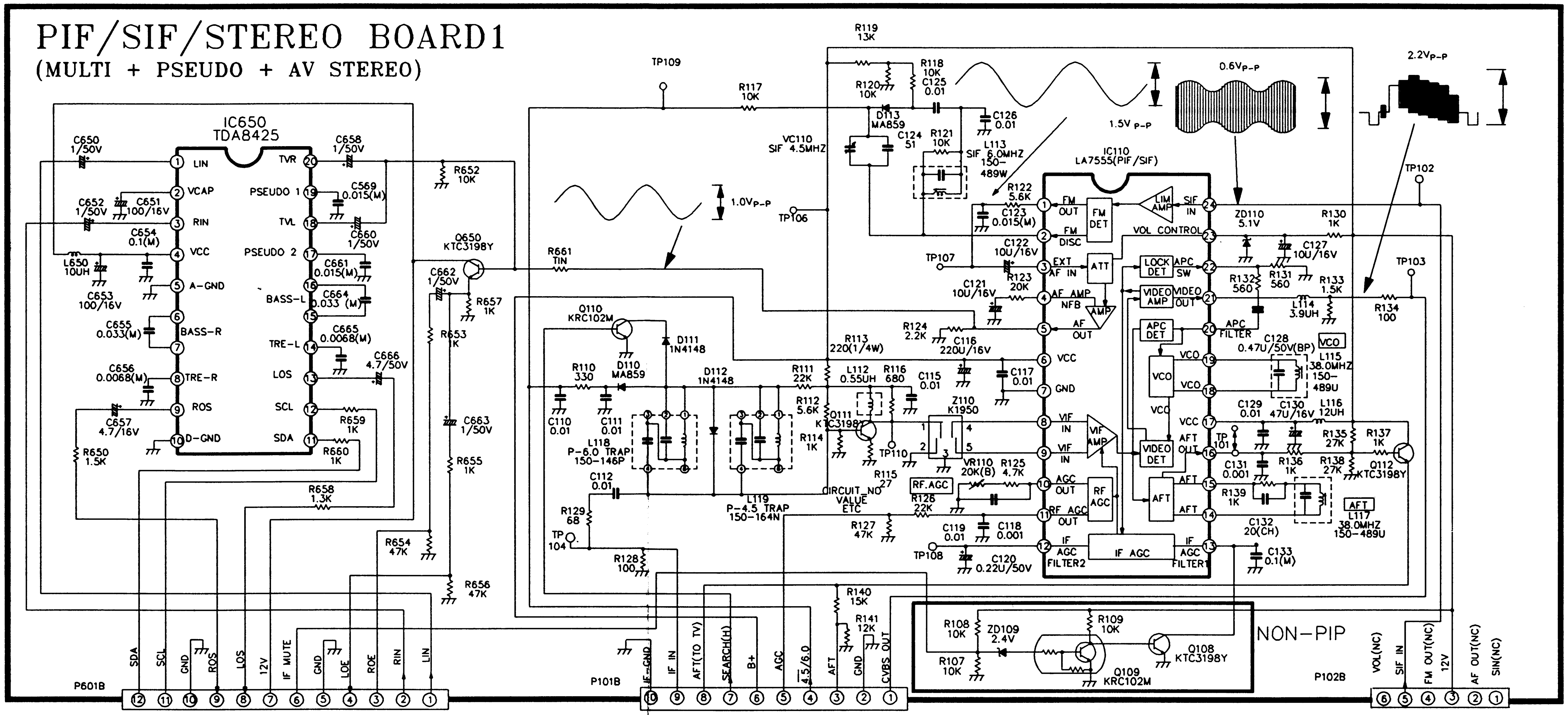

(NOTE)
(*): OPTION
ANT.
(*)
To PIP Board
TU2P (Tuner)
SP101
Splitter
RF
TU101
Tuner
IF
CS1
DATA1
CLK1
LOCK1
IC2
X24C04
EEPROM
SDA1
SCL1
IC1
u-COM
SDA2
SCL2
CS2
DATA2
CLK2
LOCK2
To PIP Board
TU2P (Tuner)
MAIN Board
IC203
UGL-316KNT
Comb Filter
IC202
LA7222
Switch
C
Y
35
37
IC201
CXA1545A
A/V
Switch
L-In/out
R-In/out
Video-in/out
IC702
CF72306
Teletext
Data
Slicer
IC701
CF70200
CF70209
Teletext
Decoder
R.G.B
F/B
From PIP
Trap
Z201
Trap
4.43M
SECAM
SW ON
To IC501
Q205
Buffer
CVBS
45
40
43
47
39
38
IC703
TEA5114
RGB
Switch
IC704
TEA5114
RGB
Switch
IC501
TA8880AN
Multi-
Video
Chroma
Ver.
Hor.
63
50
51
49
16
17
18
IC502
TA8772AN
1H-
Delay
30
29
27
26
37
38
40
41
IC503
AN5342K
Sharpness
Control
15
2
IC204
MC14577
OP-amp
Dual
Video
IC205
LA7016
Switch
DL505
L205
SECAM
High
From pin45
of IC201
IC3
KIA7042P
For u-COM
(Reset)
IC706
KIA7042P
For TXT
IC601
LA4282
Sound
Amp.
5
2
7
11
L-amp
R-amp
P601
P602
SP
IC602
LA4282
Sound
Amp.
Super
Woofer
P604
P603
R+L
P1S
IF Board
Z1T
K6266K
SAW
Z2T
K9253M
SAW
Q1T
Pre-AMP.
Z4T
T4.5M
Z3T
T5.5/
6.0M
IC1T
LA7577
VIF
IF
Signal
Processor
Q6T
Q7T
IC3S
GL4558
OP-amp
IC2S
GL4558
OP-amp
IC1S
MSP3410
(MSP3400)
Multi-
Sound
Processor
IC4S
GL4558
OP-amp
IC5S
KIA7042
Reset
IC7S
KIA7805
5V
IC6S
KIA7808
8V
12V
CPT Board
CPT
220V
12V
Q960
Q963
Q966
Power & Deflection
Board
D-COIL
RL801
12V
From u-COM
(High/Low)
IC301
LA7838
Ver.
Amp.
Ver.
DY
IC802
TLP721
Photo
Coupler
IC803
SE110
Error
Amp.
IC302
KIA78L12
25V
T803
B+
D801
Bridge
Diode
IC801
STR-
S6709
SMPS
Control
IC804
KIA78L05
IC806
KIA7809P
IC805
PQ12RF21
T402
FBT
PIP Board (*)
From
SP101
on Main
Board
From
u-COM
on Main
Board
TU2P
Tuner
CS2
DATA2
CLK2
LOCK2
Q1P
Pre-AMP.
Z1P
OFW6233K
SAW
IC1P
LA7555
VIF
SIF
IC8P
KIA7805
Analog
IC9P
KIA7805
Digital
IC7P
KIA78L08
12V
To IC704
R.G.B
F/B
FBP
V.B
IC5P
SDA9188
-3X
PIP
Processor
IC4P
SDA9187
-2X
A/D
Converter
SSC
B-Y
R-Y
Y
IC2P
TDA9160
PAL
SECAM
NTSC
Decoder
Q4P
CVBS1

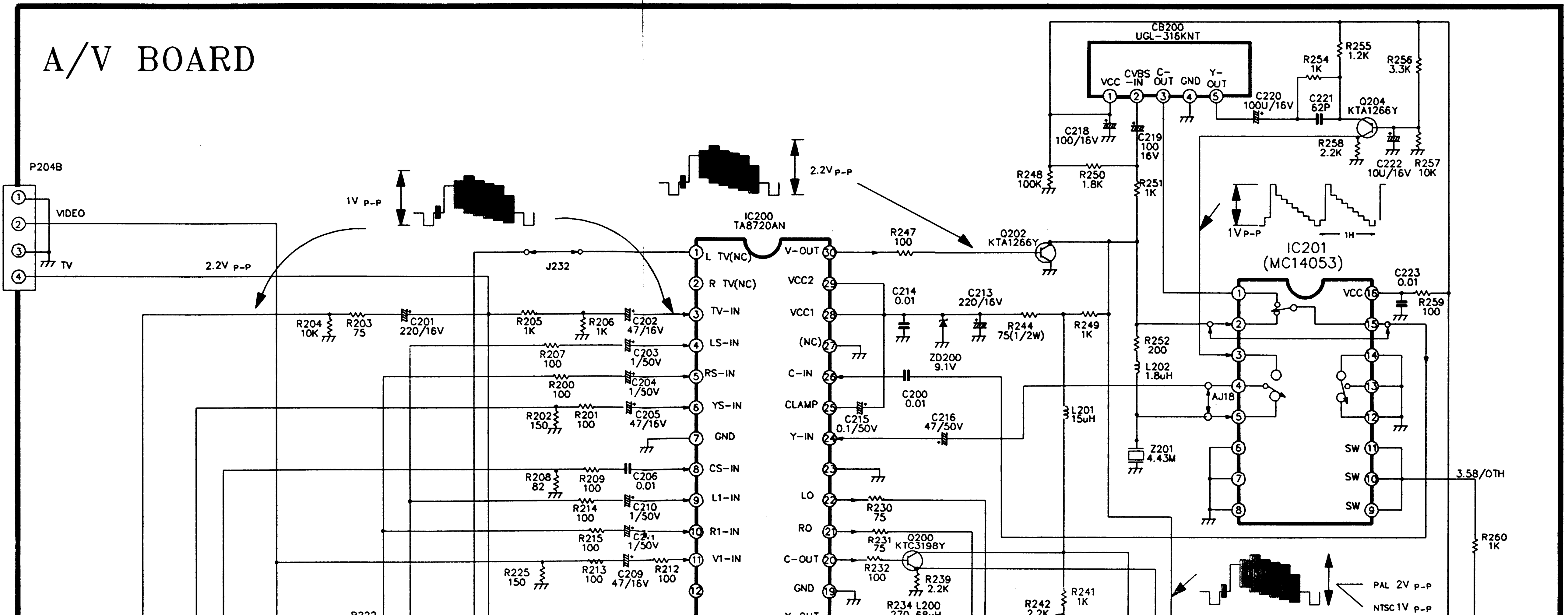
P/N : 484-914A-S2

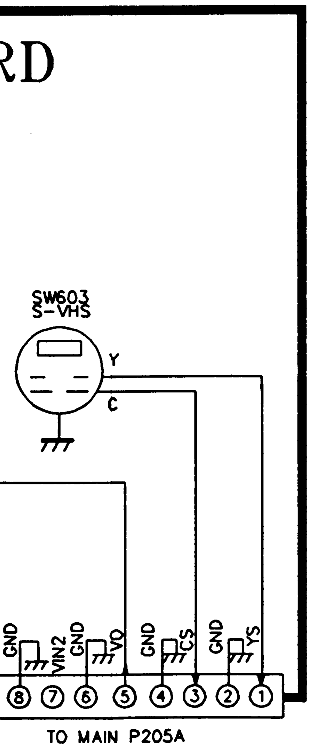
/P

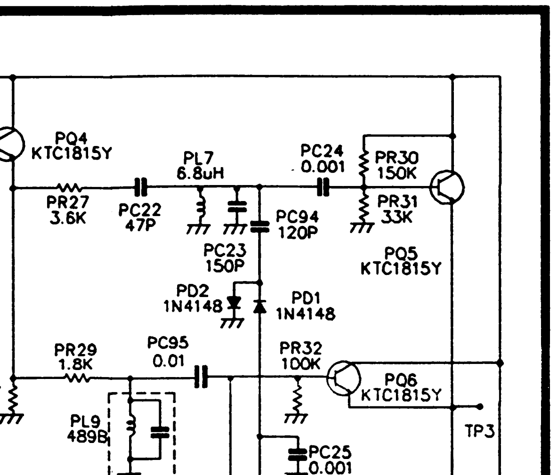
/P

/P

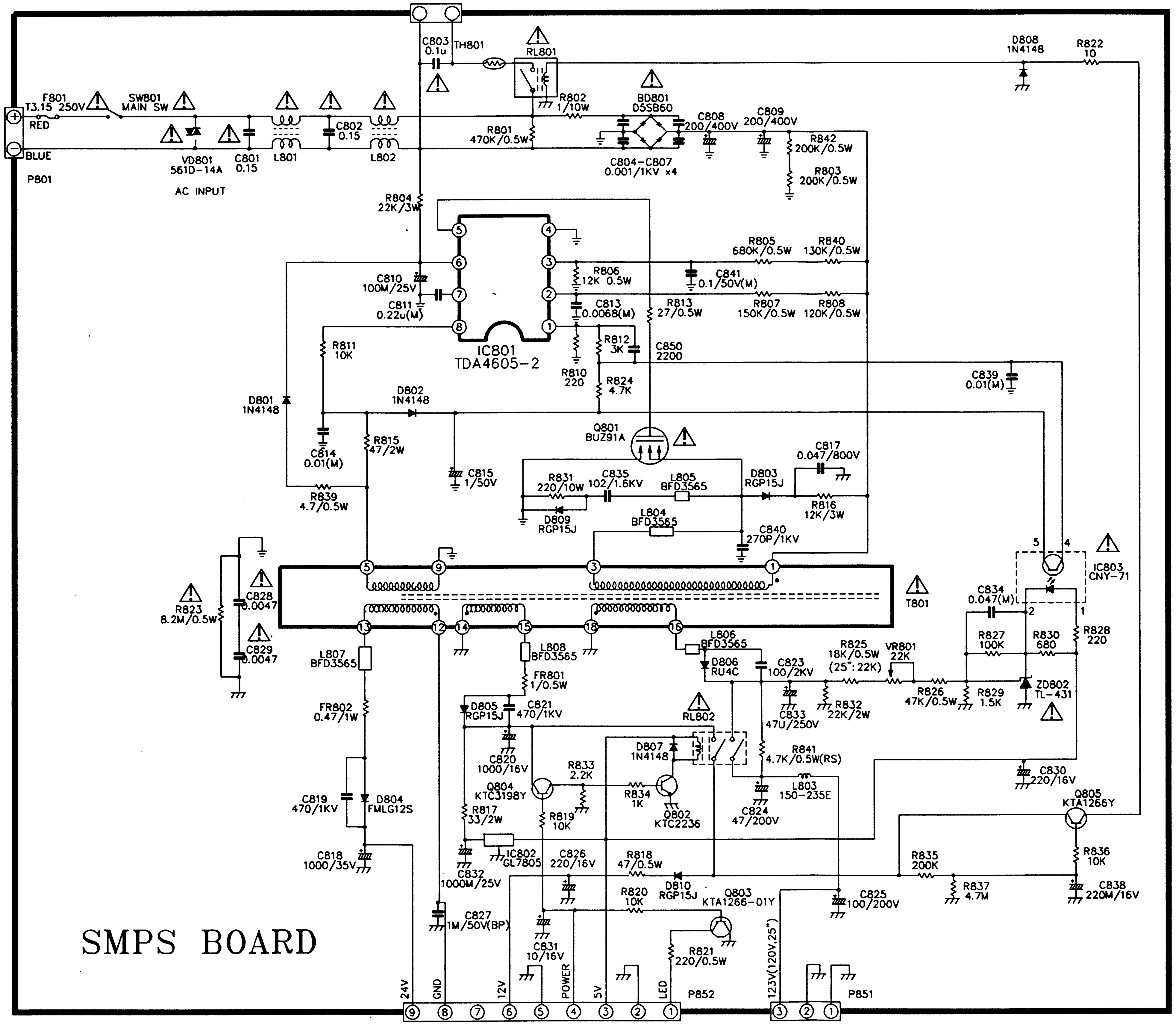

PIF/SIF/STEREO BOARD1
(MULTI + PSEUDO + AV STEREO)
IC650
TDA8425
LIN
VCAP
RIN
VCC
A-GND
BASS-R
TRE-R
ROS
D-GND
TVR
PSEUDO 1
TVL
PSEUDO 2
BASS-L
TRE-L
LOS
SCL
SDA
Q650
KTC3198Y
IC110
LA7555(PIF/SIF)
FM OUT
FM DISC
EXT AF IN
AF AMP NFB
AF OUT
VCC
GND
VIF IN
AGC OUT
RF AGC OUT
IF AGC FILTER2
IF AGC
IF AGC FILTER1
AFT
VCO
APC FILTER
VIDEO OUT
APC SW
VOL CONTROL
SIF IN
LIM AMP
FM DET
ATT
LOCK DET
VIDEO AMP
APC DET
VIDEO DET
VIF AMP
RF AGC
TP109
TP106
TP107
TP108
TP110
TP102
TP103
TP104
0.6V P-P
1.5V P-P
2.2V P-P
1.0V P-P
NON-PIP
Q108 KTC3198Y
Q109 KRC102M
Q110 KRC102M
Q111 KTC3198Y
Q112 KTC3198Y
P601B
SDA
SCL
GND
ROS
LOS
12V
IF MUTE
GND
LOE
ROE
RIN
LIN
P101B
IF-GND
IF IN
AFT(TO TV)
SEARCH(H)
B+
AGC
4.5/6.0
AFT
GND
CVBS OUT
P102B
VOL(NC)
SIF IN
FM OUT(NC)
12V
AF OUT(NC)
SIN(NC)


A/V BOARD
P204B
TO PIP
VIDEO
TV
1V P-P
2.2V P-P
IC200
TA8720AN
L TV(NC)
R TV(NC)
TV-IN
LS-IN
RS-IN
YS-IN
GND
CS-IN
L1-IN
R1-IN
V1-IN
V-OUT
VCC2
VCC1
(NC)
C-IN
CLAMP
Y-IN
LO
RO
C-OUT
GND
J232
Q202 KTA1266Y
Q200 KTC3198Y
Q204 KTA1266Y
CB200
UGL-316KNT
VCC
CVBS-IN
C-OUT
GND
Y-OUT
IC201
(MC14053)
VCC
SW
1V P-P
1H
3.58/OTH
PAL 2V P-P
NTSC 1V P-P
Z201 4.43M
ZD200 9.1V

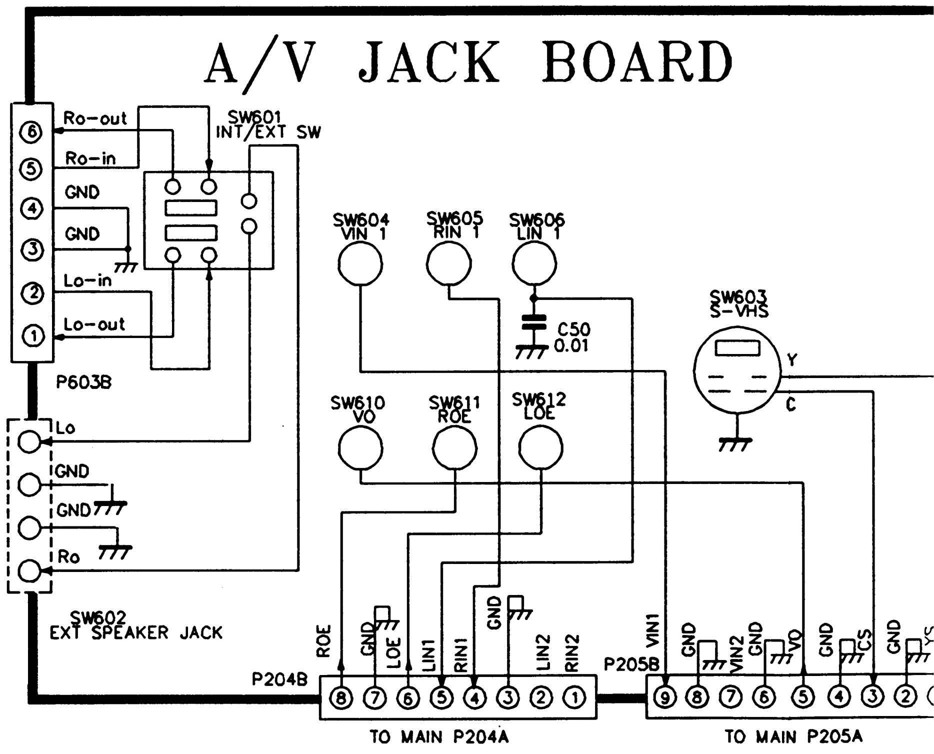

RD
SW603
S-VHS
Y
C
GND
VIN2
GND
VO
GND
CS
GND
YS
TO MAIN P205A


PQ4 KTC1815Y
PQ5 KTC1815Y
PQ6 KTC1815Y
PL7 6.8uH
PD1 1N4148
PD2 1N4148
PL9 489B
TP3

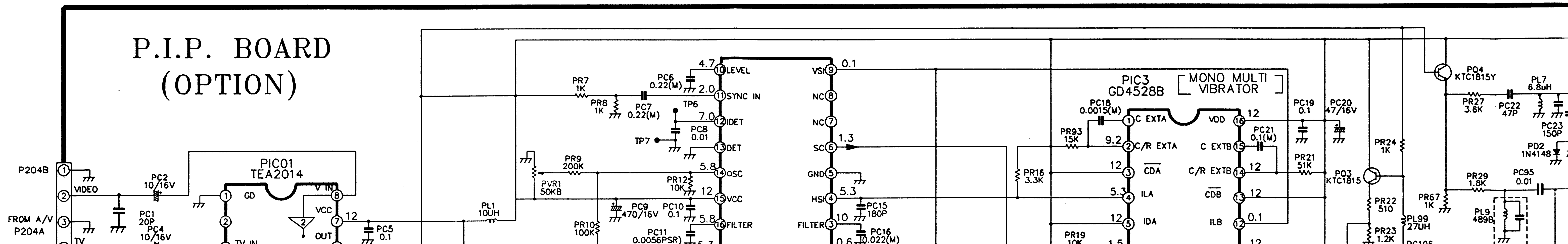
CFT-2590/P
CFT-2505/P
CFT-2875/P



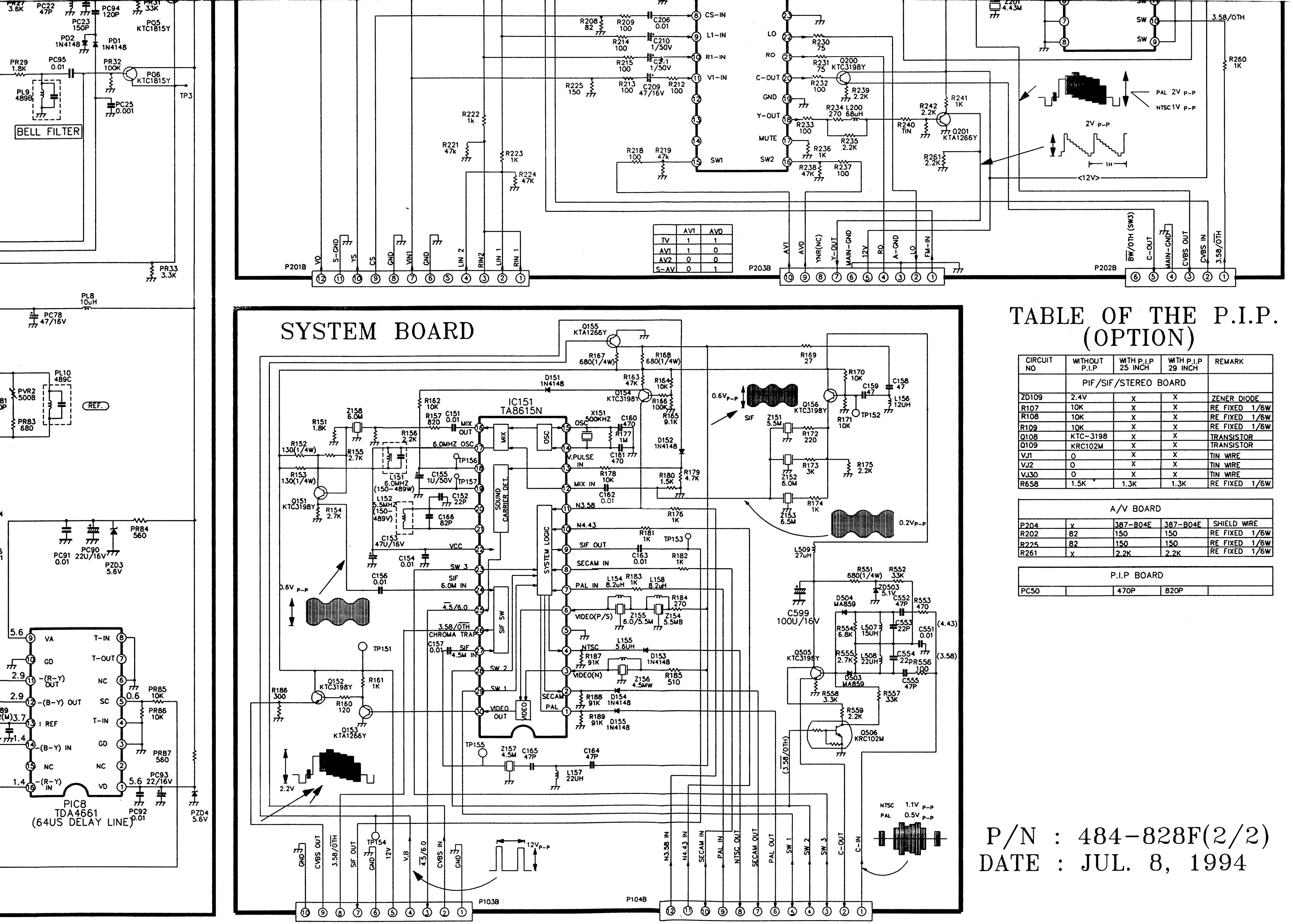
SMPS BOARD
P801
RED
BLUE
AC INPUT
F801 T3.15 250V
SW801 MAIN SW
VD801 561D-14A
C801 0.15
L801
C802 0.15
L802
C803 0.1u
TH801
RL801
R802 1/10W
R801 470K/0.5W
BD801 D5SB60
C804-C807 0.001/1KV x4
C808 200/400V
C809 200/400V
R842 200K/0.5W
R803 200K/0.5W
D808 1N4148
R822 10
R804 22K/3W
IC801 TDA4605-2
C810 100M/25V
C811 0.22u(M)
R806 12K 0.5W
C841 0.1/50V(M)
R805 680K/0.5W
R840 130K/0.5W
C813 0.0068(M)
R813 27/0.5W
R807 150K/0.5W
R808 120K/0.5W
R812 3K
C850 2200
R810 220
R824 4.7K
R811 10K
D801 1N4148
D802 1N4148
C839 0.01(M)
C814 0.01(M)
R815 47/2W
C815 1/50V
Q801 BUZ91A
C817 0.047/800V
R831 220/10W
C835 102/1.6KV
L805 BFD3565
D803 RGP15J
R816 12K/3W
D809 RGP15J
L804 BFD3565
C840 270P/1KV
R839 4.7/0.5W
IC803 CNY-71
T801
R823 8.2M/0.5W
C828 0.0047
C829 0.0047
L807 BFD3565
FR802 0.47/1W
C819 470/1KV
D804 FMLG12S
C818 1000/35V
L808 BFD3565
FR801 1/0.5W
D805 RGP15J
C821 470/1KV
C820 1000/16V
L806 BFD3565
D806 RU4C
C823 100/2KV
R825 18K/0.5W (25": 22K)
VR801 22K
C834 0.047(M)
R827 100K
R830 680
R828 220
ZD802 TL-431
R826 47K/0.5W
R829 1.5K
C833 47U/250V
R832 22K/2W
RL802
D807 1N4148
R833 2.2K
Q804 KTC3198Y
R834 1K
Q802 KTC2236
R841 4.7K/0.5W(RS)
L803 150-235E
C830 220/16V
Q805 KTA1266Y
R817 33/2W
R819 10K
C824 47/200V
IC802 GL7805
C826 220/16V
R818 47/0.5W
D810 RGP15J
R835 200K
R836 10K
C832 1000M/25V
R837 4.7M
C838 220M/16V
C827 1M/50V(BP)
R820 10K
Q803 KTA1266-01Y
C825 100/200V
C831 10/16V
R821 220/0.5W
24V
GND
12V
POWER
5V
LED
P852
123V(120V,25")
P851



A/V JACK BOARD
P603B
Ro-out
Ro-in
GND
GND
Lo-in
Lo-out
SW601 INT/EXT SW
Lo
GND
GND
Ro
SW602 EXT SPEAKER JACK
SW604 VIN 1
SW605 RIN 1
SW606 LIN 1
C50 0.01
SW603 S-VHS
Y
C
SW610 VO
SW611 ROE
SW612 LOE
ROE
GND
LOE
LIN1
RIN1
GND
LIN2
RIN2
VIN1
GND
VIN2
GND
VO
GND
CS
GND
P204B
P205B
TO MAIN P204A
TO MAIN P205A



P.I.P. BOARD (OPTION)
P204B
VIDEO
FROM A/V P204A
TV
PC2 10/16V
PC1 20P
PC4 10/16V
PIC01 TEA2014
GD
V IN
VCC
OUT
TV IN
PC5 0.1
PL1 10UH
PR7 1K
PR8 1K
PC6 0.22(M)
PC7 0.22(M)
TP6
TP7
PC8 0.01
PR9 200K
PVR1 50KB
PR12 10K
PR10 100K
PC9 470/16V
PC10 0.1
PC11 0.0056PSR)
LEVEL
SYNC IN
IDET
DET
OSC
VCC
FILTER
VSI
NC
NC
SC
GND
HSI
FILTER
PC15 180P
PC16 0.022(M)
PIC3 GD4528B
MONO MULTI VIBRATOR
PC18 0.0015(M)
PR93 15K
C EXTA
C/R EXTA
CDA
ILA
IDA
VDD
C EXTB
C/R EXTB
CDB
ILB
PC21 0.1(M)
PC19 0.1
PC20 47/16V
PR16 3.3K
PR19 10K
PR21 51K
PQ3 KTC1815
PR22 510
PR23 1.2K
PR24 1K
PQ4 KTC1815Y
PR27 3.6K
PC22 47P
PL7 6.8uH
PC23 150P
PD2 1N4148
PR29 1.8K
PC95 0.01
PR67 1K
PL99 27UH
PL9 489B


SYSTEM BOARD
IC151
TA8615N
MIX
OSC
SOUND CARRIER DET.
SYSTEM LOGIC
SIF SW
VIDEO
BELL FILTER
REF.
PIC8
TDA4661
(64US DELAY LINE)
VA
GD
-(R-Y) OUT
-(B-Y) OUT
I REF
-(B-Y) IN
NC
-(R-Y) IN
T-IN
T-OUT
SC
VD
Q155 KTA1266Y
Q154 KTC3198Y
Q156 KTC3198Y
Q151 KTC3198Y
Q152 KTC3198Y
Q153 KTA1266Y
Q505 KTC3198Y
Q506 KRC102M
Q200 KTC3198Y
Q201 KTA1266Y
PQ5 KTC1815Y
PQ6 KTC1815Y
C599 100U/16V
CS-IN
L1-IN
R1-IN
V1-IN
LO
RO
C-OUT
GND
Y-OUT
MUTE
SW1
SW2
PAL 2V P-P
NTSC 1V P-P
2V P-P
<12V>
1H
0.6V P-P
0.2V P-P
2.2V
12V P-P
NTSC 1.1V P-P
PAL 0.5V P-P
P201B
VO
S-GND
YS
CS
GND
VIN1
GND
LIN 2
RIN2
LIN 1
RIN 1
P203B
AV1
AV0
YNR(NC)
Y-OUT
MAIN-GND
12V
RO
A-GND
LO
FM-IN
P202B
BW/OTH (SW3)
C-OUT
MAIN-GND
CVBS OUT
CVBS IN
3.58/OTH
P103B
GND
CVBS OUT
3.58/OTH
SIF OUT
GND
12V
V.B
4.5/6.0
CVBS IN
GND
P104B
N3.58 IN
N4.43 IN
SECAM IN
PAL IN
NTSC OUT
SECAM OUT
PAL OUT
SW 1
SW 2
SW 3
C-OUT
C-IN
TP3
TP151
TP152
TP153
TP154
TP155
TP156
TP157

	AV1	AV0
TV	1	1
AV1	1	0
AV2	0	0
S-AV	0	1

TABLE OF THE P.I.P. (OPTION)

CIRCUIT NO	WITHOUT P.I.P	WITH P.I.P 25 INCH	WITH P.I.P 29 INCH	REMARK
	PIF/SIF/STEREO BOARD			
ZD109	2.4V	X	X	ZENER DIODE
R107	10K	X	X	RE FIXED 1/6W
R108	10K	X	X	RE FIXED 1/6W
R109	10K	X	X	RE FIXED 1/6W
Q108	KTC-3198	X	X	TRANSISTOR
Q109	KRC102M	X	X	TRANSISTOR
VJ1	0	X	X	TIN WIRE
VJ2	0	X	X	TIN WIRE
VJ30	0	X	X	TIN WIRE
R658	1.5K	1.3K	1.3K	RE FIXED 1/6W

A/V BOARD				
P204	X	387-B04E	387-B04E	SHIELD WIRE
R202	82	150	150	RE FIXED 1/6W
R225	82	150	150	RE FIXED 1/6W
R261	X	2.2K	2.2K	RE FIXED 1/6W

P.I.P BOARD				
PC50		470P	820P	

P/N : 484-828F(2/2)
DATE : JUL. 8, 1994

GRAM(MC-15A)

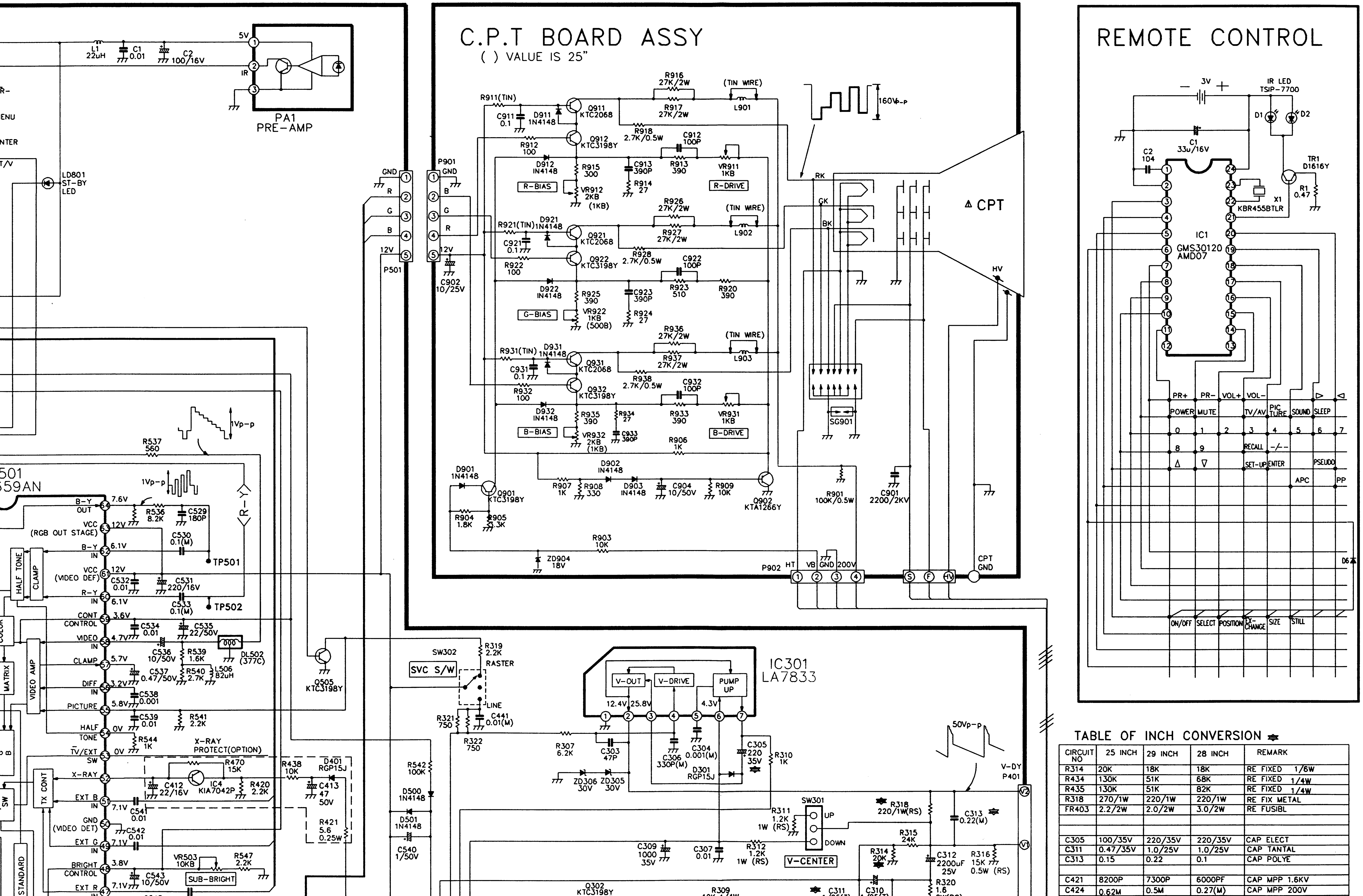
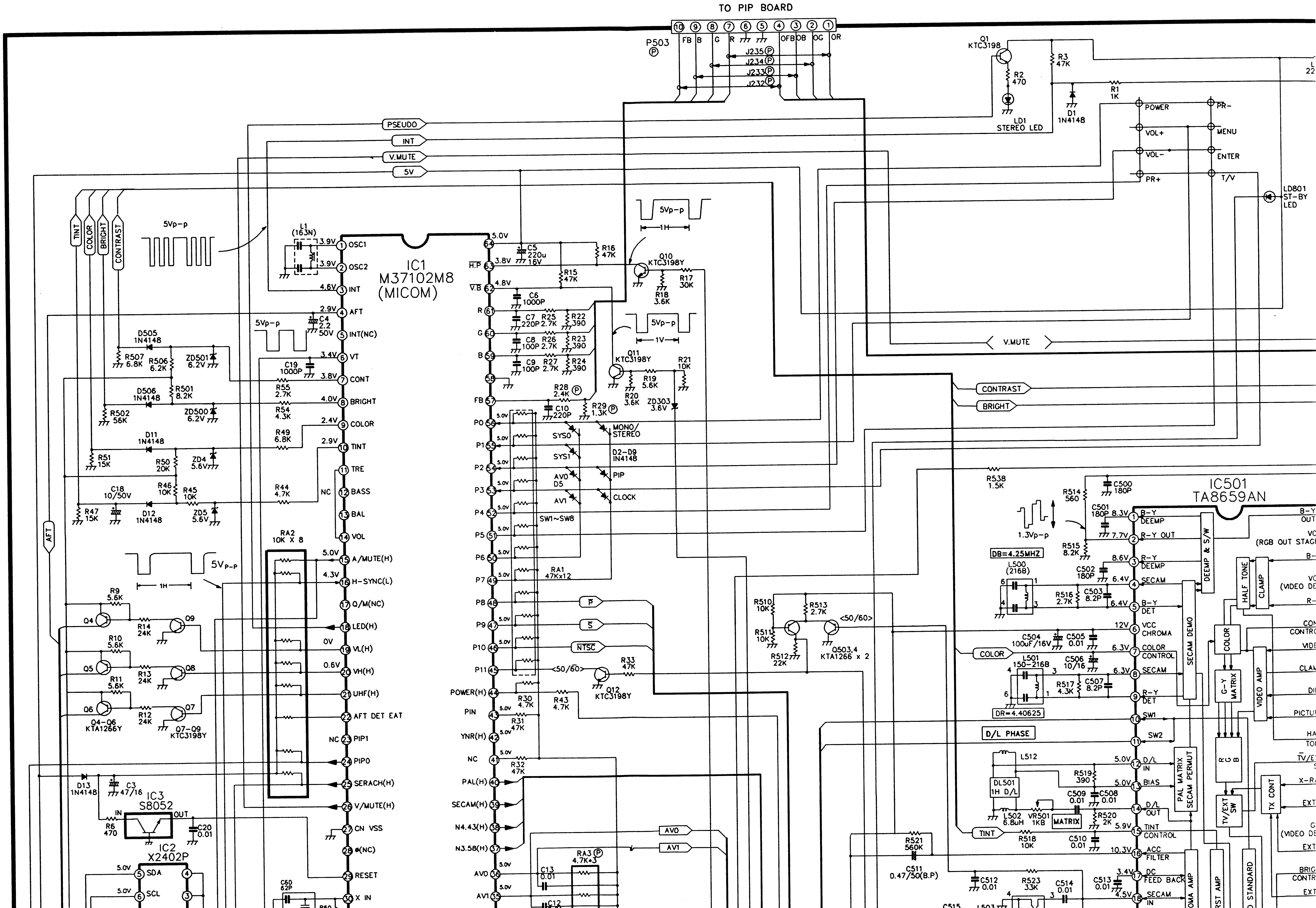
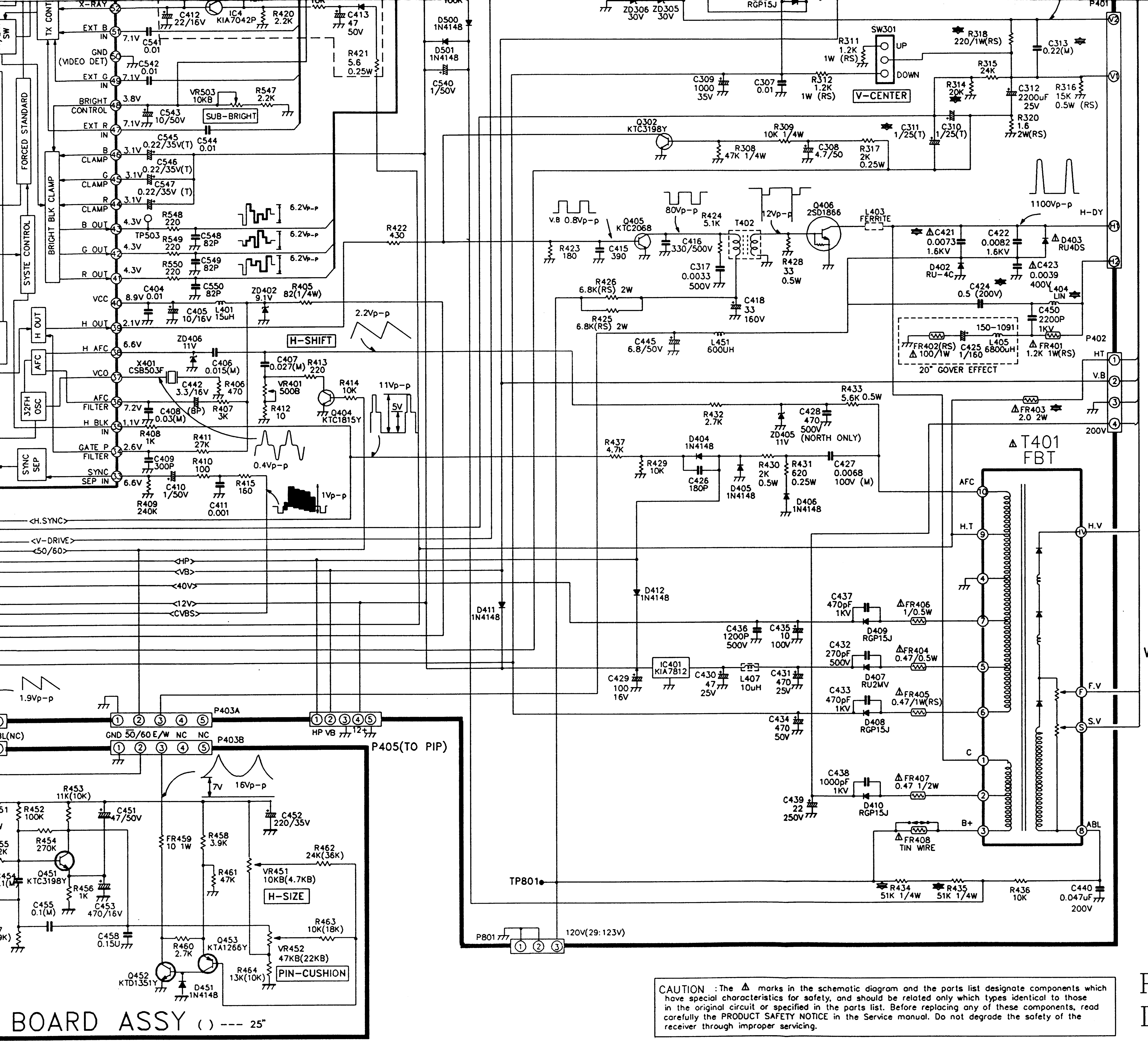

PA1
PRE-AMP
L1 22uH
C1 0.01
C2 100/16V
5V
IR
LD801 ST-BY LED
P501
GND
R
G
B
12V
C.P.T BOARD ASSY
( ) VALUE IS 25"
P901
R916 27K/2W
R917 27K/2W
(TIN WIRE)
L901
R911(TIN)
C911 0.1
D911 1N4148
Q911 KTC2068
Q912 KTC3198Y
R918 2.7K/0.5W
C912 100P
R912 100
D912 IN4148
R915 300
C913 390P
R913 390
VR911 1KB
R-BIAS
VR912 2KB (1KB)
R914 27
R-DRIVE
R926 27K/2W
R927 27K/2W
L902
R921(TIN)
D921 1N4148
Q921 KTC2068
C921 0.1
Q922 KTC3198Y
R928 2.7K/0.5W
C922 100P
R922 100
D922 IN4148
R925 390
C923 390P
R923 510
R920 390
G-BIAS
VR922 1KB (500B)
R924 27
R936 27K/2W
R937 27K/2W
L903
R931(TIN)
D931 1N4148
Q931 KTC2068
C931 0.1
Q932 KTC3198Y
R938 2.7K/0.5W
C932 100P
R932 100
D932 IN4148
R935 390
R934 27
R933 390
VR931 1KB
B-BIAS
VR932 2KB (1KB)
C933 390P
B-DRIVE
R906 1K
D902 IN4148
D901 1N4148
Q901 KTC3198Y
R907 1K
R908 330
D903 IN4148
C904 10/50V
R909 10K
Q902 KTA1266Y
R904 1.8K
R905 3.3K
R903 10K
ZD904 18V
C902 10/25V
160Vp-p
RK
GK
BK
CPT
HV
SG901
R901 100K/0.5W
C901 2200/2KV
P902
HT
VB
GND
200V
S
F
HV
CPT GND
REMOTE CONTROL
3V
IR LED TSIP-7700
D1
D2
C1 33u/16V
C2 104
TR1 D1616Y
R1 0.47
X1 KBR455BTLR
IC1 GMS30120 AMD07
PR+
PR-
VOL+
VOL-
POWER
MUTE
TV/AV
PIC TURE
SOUND
SLEEP
0 1 2 3 4 5 6 7
8 9
RECALL
-/--
SET-UP
ENTER
PSEUDO
APC
PP
ON/OFF
SELECT
POSITION
EX-CHANGE
SIZE
STILL
D6
R537 560
1Vp-p
501
559AN
B-Y OUT
7.6V
R536 8.2K
C529 180P
VCC (RGB OUT STAGE)
12V
C530 0.1(M)
B-Y IN
6.1V
TP501
VCC (VIDEO DEF)
C532 0.01
C531 220/16V
R-Y IN
C533 0.1(M)
TP502
R-Y
CONT CONTROL
3.6V
C534 0.01
C535 22/50V
VIDEO IN
4.7V
C536 10/50V
R539 1.6K
DL502 (377C)
CLAMP
5.7V
C537 0.47/50V
R540 2.7K
L506 82uH
DIFF IN
3.2V
C538 0.001
PICTURE
5.8V
C539 0.01
R541 2.2K
HALF TONE
0V
R544 1K
X-RAY PROTECT(OPTION)
TV/EXT SW
R470 15K
C412 22/16V
IC4 KIA7042P
R420 2.2K
X-RAY
EXT B IN
7.1V
C541 0.01
GND (VIDEO DET)
C542 0.01
EXT G IN
BRIGHT CONTROL
3.8V
VR503 10KB
R547 2.2K
C543 10/50V
SUB-BRIGHT
EXT R IN
HALF TONE
CLAMP
COLOR
MATRIX
VIDEO AMP
TX CONT
SW
STANDARD
R438 10K
D401 RGP15J
C413 47 50V
R421 5.6 0.25W
Q505 KTC3198Y
SW302
SVC S/W
R319 2.2K
RASTER
LINE
R321 750
C441 0.01(M)
R322 750
R542 100K
D500 1N4148
D501 1N4148
C540 1/50V
IC301 LA7833
V-OUT
V-DRIVE
PUMP UP
12.4V
25.8V
4.3V
R307 6.2K
C303 47P
C306 330P(M)
C304 0.001(M)
C305 220 35V
R310 1K
ZD306 30V
ZD305 30V
D301 RGP15J
50Vp-p
V-DY
P401
R318 220/1W(RS)
C313 0.22(M)
R311 1.2K 1W (RS)
SW301
UP
DOWN
V-CENTER
R315 24K
C309 1000 35V
C307 0.01
R312 1.2K 1W (RS)
R314 20K
C312 2200uF 25V
R316 15K 0.5W (RS)
R320 1.6
Q302 KTC3198Y
R309
C311
C310

TABLE OF INCH CONVERSION

CIRCUIT NO	25 INCH	29 INCH	28 INCH	REMARK
R314	20K	18K	18K	RE FIXED 1/6W
R434	130K	51K	68K	RE FIXED 1/4W
R435	130K	51K	82K	RE FIXED 1/4W
R318	270/1W	220/1W	220/1W	RE FIX METAL
FR403	2.2/2W	2.0/2W	3.0/2W	RE FUSIBL
C305	100/35V	220/35V	220/35V	CAP ELECT
C311	0.47/35V	1.0/25V	1.0/25V	CAP TANTAL
C313	0.15	0.22	0.1	CAP POLYE
C421	8200P	7300P	6000PF	CAP MPP 1.6KV
C424	0.62M	0.5M	0.27(M)	CAP MPP 200V

CIRCUIT DIAGRAM


TO PIP BOARD
P503
Ⓟ
FB
B
G
R
OFB
OB
OG
OR
J235Ⓟ
J234Ⓟ
J233Ⓟ
J232Ⓟ
Q1
KTC3198
R3
47K
R2
470
LD1
STEREO LED
D1
1N4148
R1
1K
POWER
PR-
VOL+
MENU
VOL-
ENTER
PR+
T/V
LD801
ST-BY
LED
PSEUDO
INT
V.MUTE
5V
TINT
COLOR
BRIGHT
CONTRAST
5Vp-p
L1
(163N)
IC1
M37102M8
(MICOM)
3.9V
OSC1
OSC2
4.6V
INT
2.9V
AFT
C4
2.2
50V
INT(NC)
3.4V
VT
C19
1000P
3.8V
CONT
R55
2.7K
4.0V
BRIGHT
R54
4.3K
2.4V
COLOR
R49
6.8K
TINT
TRE
NC
BASS
R44
4.7K
BAL
VOL
D505
1N4148
R507
6.8K
R506
6.2K
ZD501
6.2V
D506
1N4148
R501
8.2K
R502
56K
ZD500
6.2V
D11
1N4148
R51
15K
R50
20K
ZD4
5.6V
C18
10/50V
R46
10K
R45
10K
R47
15K
D12
1N4148
ZD5
5.6V
AFT
RA2
10K X 8
5.0V
A/MUTE(H)
4.3V
H-SYNC(L)
Q/M(NC)
LED(H)
0V
VL(H)
0.6V
VH(H)
UHF(H)
AFT DET EAT
PIP1
PIPO
SERACH(H)
V/MUTE(H)
CN VSS
Φ(NC)
RESET
X IN
5Vp-p
1H
R9
5.6K
Q4
R14
24K
Q9
R10
5.6K
Q5
R13
24K
Q8
R11
5.6K
Q6
R12
24K
Q7
Q4-Q6
KTA1266Y
Q7-Q9
KTC3198Y
D13
1N4148
C3
47/16
IC3
S8052
IN
OUT
R6
470
C20
0.01
IC2
X2402P
SDA
SCL
C60
62P
R50
5.0V
C5
220u
16V
R16
47K
H.P
3.8V
R15
47K
Q10
KTC3198Y
R17
30K
R18
3.6K
V.B
4.8V
C6
1000P
R
C7
220P
R25
2.7K
R22
390
G
C8
100P
R26
2.7K
R23
390
B
C9
100P
R27
2.7K
R24
390
Q11
KTC3198Y
R21
10K
R19
5.6K
R20
3.6K
ZD303
3.6V
FB
R28
2.4K
Ⓟ
C10
220P
R29
1.3K Ⓟ
P0
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
SYS0
SYS1
AV0
D5
AV1
MONO/
STEREO
D2-D9
1N4148
PIP
CLOCK
SW1~SW8
RA1
47Kx12
P
S
NTSC
<50/60>
R33
47K
Q12
KTC3198Y
POWER(H)
R30
4.7K
R43
4.7K
PIN
R31
47K
YNR(H)
NC
R32
47K
PAL(H)
SECAM(H)
N4.43(H)
N3.58(H)
AV0
AV1
RA3 Ⓟ
4.7K*3
C13
0.01
C12
5Vp-p
1H
5Vp-p
1V
V.MUTE
CONTRAST
BRIGHT
COLOR
TINT
R538
1.5K
R514
560
C500
180P
C501
180P
IC501
TA8659AN
1.3Vp-p
R515
8.2K
DB=4.25MHZ
L500
(216B)
C502
180P
R516
2.7K
C503
8.2P
B-Y
DEEMP
R-Y OUT
R-Y
DEEMP
SECAM
B-Y
DET
VCC
CHROMA
COLOR
CONTROL
SECAM
R-Y
DET
SW1
SW2
D/L
IN
BIAS
D/L
OUT
TINT
CONTROL
ACC
FILTER
DC
FEED BACK
SECAM
IN
8.3V
7.7V
8.6V
6.4V
6.4V
12V
6.3V
6.3V
5.0V
5.0V
5.9V
10.3V
3.4V
4.5V
C504
100uF/16V
C505
0.01
L501
150-216B
C506
10/16
R517
4.3K
C507
8.2P
DR=4.40625
D/L PHASE
L512
DL501
1H D/L
R519
390
C509
0.01
C508
0.01
L502
6.8uH
VR501
1KB
MATRIX
R520
2K
R518
10K
C510
0.01
R521
560K
C511
0.47/50(B.P)
C512
0.01
R523
33K
C514
0.01
C513
0.01
C515
L503
R510
10K
R513
2.7K
<50/60>
R511
10K
R512
22K
Q503,4
KTA1266 x 2
DEEMP & S/W
SECAM DEMO
PAL MATRIX
SECAM PERMUT
HALF TONE
CLAMP
COLOR
G-Y
MATRIX
VIDEO AMP
R
G
B
TV/EXT
SW
TX CONT
B-Y
OUT
(RGB OUT STAG
(VIDEO DE
(VIDEO DE
STANDARD
RST AMP
OMA AMP


X-RAY
EXT B IN
GND (VIDEO DET)
EXT G IN
BRIGHT CONTROL
EXT R IN
B CLAMP
G CLAMP
R CLAMP
B OUT
G OUT
R OUT
VCC
H OUT
H AFC
VCO
AFC FILTER
H BLK IN
GATE P FILTER
SYNC SEP IN
TX CONT
FORCED STANDARD
BRIGHT BLK CLAMP
SYSTE CONTROL
H OUT
AFC
32FH OSC
SYNC SEP
SW
C412 22/16V
IC4 KIA7042P
R420 2.2K
C413 47 50V
R421 5.6 0.25W
C541 0.01
C542 0.01
VR503 10KB
R547 2.2K
SUB-BRIGHT
C543 10/50V
C545 0.22/35V(T)
C544 0.01
C546 0.22/35V(T)
C547 0.22/35V (T)
R548 220
TP503
R549 220
C548 82P
R550 220
C549 82P
C550 82P
6.2Vp-p
C404 0.01
C405 10/16V
L401 15uH
ZD402 9.1V
R405 82(1/4W)
2.2Vp-p
H-SHIFT
ZD406 11V
C406 0.015(M)
X401 CSB503F
C442 3.3/16V
R406 470
C407 0.027(M)
R413 220
VR401 500B
R412 10
Q404 KTC1815Y
R414 10K
11Vp-p
5V
C408 0.03(M)
(BP)
R407 3K
R408 1K
R411 27K
C409 300P
R410 100
C410 1/50V
R409 240K
C411 0.001
R415 160
0.4Vp-p
1Vp-p
<H.SYNC>
<V-DRIVE>
<50/60>
<HP>
<VB>
<40V>
<12V>
<CVBS>
D500 1N4148
D501 1N4148
C540 1/50V
R422 430
ZD306 30V
ZD305 30V
RGP15J
SW301
UP
DOWN
V-CENTER
R311 1.2K 1W (RS)
R312 1.2K 1W (RS)
C307 0.01
C309 1000 35V
R318 220/1W(RS)
C313 0.22(M)
R315 24K
R314 20K
C312 2200uF 25V
R316 15K 0.5W (RS)
R320 1.6 2W(RS)
Q302 KTC3198Y
R309 10K 1/4W
R308 47K 1/4W
C308 4.7/50
R317 2K 0.25W
C311 1/25(T)
C310 1/25(T)
P401
V2
V1
H-DY
H1
H2
1100Vp-p
V.B 0.8Vp-p
Q405 KTC2068
80Vp-p
R424 5.1K
T402
12Vp-p
Q406 2SD1866
L403 FERRITE
R423 180
C415 390
C416 330/500V
C317 0.0033 500V
R428 33 0.5W
C421 0.0073 1.6KV
C422 0.0082 1.6KV
D403 RU4DS
D402 RU-4C
C423 0.0039 400V
L404 LIN
C424 0.5 (200V)
C418 33 160V
R426 6.8K(RS) 2W
R425 6.8K(RS) 2W
C445 6.8/50V
L451 600UH
C450 2200P 1KV
150-1091
FR402(RS) 100/1W
C425 1/160
L405 6800uH
FR401 1.2K 1W(RS)
20" GOVER EFFECT
P402
HT
V.B
200V
R433 5.6K 0.5W
R432 2.7K
C428 470 500V (NORTH ONLY)
ZD405 11V
FR403 2.0 2W
T401 FBT
R437 4.7K
R429 10K
D404 1N4148
C426 180P
D405 1N4148
R430 2K 0.5W
R431 620 0.25W
D406 1N4148
C427 0.0068 100V (M)
AFC
H.T
H.V
D412 1N4148
D411 1N4148
C437 470pF 1KV
FR406 1/0.5W
D409 RGP15J
C436 1200P 500V
C435 10 100V
C432 270pF 500V
FR404 0.47/0.5W
D407 RU2MV
IC401 KIA7812
C429 100 16V
C430 47 25V
L407 10uH
C431 470 25V
C433 470pF 1KV
FR405 0.47/1W(RS)
D408 RGP15J
C434 470 50V
F.V
S.V
C
C438 1000pF 1KV
FR407 0.47 1/2W
D410 RGP15J
C439 22 250V
B+
FR408 TIN WIRE
ABL
TP801
R434 51K 1/4W
R435 51K 1/4W
R436 10K
C440 0.047uF 200V
P801
120V(29:123V)
1.9Vp-p
P403A
GND 50/60 E/W NC NC
P403B
BL(NC)
HP VB 12
P405(TO PIP)
7V 16Vp-p
R453 11K(10K)
R452 100K
C451 47/50V
C452 220/35V
R454 270K
Q451 KTC3198Y
R456 1K
C453 470/16V
C455 0.1(M)
C458 0.15U
FR459 10 1W
R458 3.9K
R461 47K
R462 24K(36K)
VR451 10KB(4.7KB)
H-SIZE
R463 10K(18K)
VR452 47KB(22KB)
R460 2.7K
Q453 KTA1266Y
R464 13K(10K)
PIN-CUSHION
Q452 KTD1351Y
D451 1N4148
BOARD ASSY () --- 25"

R434	130K	51K	68K	RE FIXED 1/4W
R435	130K	51K	82K	RE FIXED 1/4W
R318	270/1W	220/1W	220/1W	RE FIX METAL
FR403	2.2/2W	2.0/2W	3.0/2W	RE FUSIBL
C305	100/35V	220/35V	220/35V	CAP ELECT
C311	0.47/35V	1.0/25V	1.0/25V	CAP TANTAL
C313	0.15	0.22	0.1	CAP POLYE
C421	8200P	7300P	6000PF	CAP MPP 1.6KV
C424	0.62M	0.5M	0.27(M)	CAP MPP 200V
L404	150-840B	150-840A	150-159G	H-LINEAITY COIL

TABLE OF THE P.I.P FOR OPTION Ⓟ

CIRCUIT NO	WITHOUT P.I.P	WITH P.I.P		REMARK
D8	X	1N4148		DIODE
R412	100	120		RE FIXED 1/6W
R521	330K	560K		RE FIXED 1/6W
RA3	167-040B	167-040K		ARRAY RESISTOR
R29	9.3K	X		RE FIXED 1/6W
R28	2.4K	430		RE FIXED 1/6W
C102	10U/50V	2.2U/50V		CAP ELECT
J28	X	O		TIN WIRE
J78	X	O		TIN WIRE
J178	X	O		TIN WIRE
J280	X	O		TIN WIRE
J232	O	X		TIN WIRE
J233	O	X		TIN WIRE
J234	O	X		TIN WIRE
J235	O	X		TIN WIRE
P1A	X	366-921C		PIN - WAFER (4)
P405	X	366-921D		PIN - WAFER (5)
P503	X	366-921J		PIN - WAFER (10)
X1	X	366-009B		PIN - PLUG
H.SINK	407-D92C	407-P70A		IC 401

NOTICE

Since this is a basic circuit diagram,
The value components and some partical connection
are subject to change for improvement

WARNING

Before servicing this chassis, read the "X-ray Radiation Precaution", "Safety Precaution and Product Safety Notice" in the SVC Manual.

VALUE OF RESISTOR, CAPACITOR and INDUCTOR

1. Resistance is shown in ohm, k=1,000
2. Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in uF and the values more than 1 in pF.
3. Unless otherwise noted in schematic, all inductor values more than 1 are expressed in uH, and the values less than 1 in mH.

OBSERVATION OF VOLTAGES AND WAVEFORMS

1. Voltages read with VTVM form point shown to chassis ground, line voltage AC100 - 270V volts, color bar signal.
2. Voltages reading may vary ±20%
3. The schematic shown is representative only.
4. All waveforms, are taken using a wide band oscilloscope and a low capacity probe.
5. Waveforms are taken using a standard colour bar signal.

CAUTION : The ⚠ marks in the schematic diagram and the parts list designate components which have special characteristics for safety, and should be related only which types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE in the Service manual. Do not degrade the safety of the receiver through improper servicing.

P/N : 484-828F (1/2)
DATE : JUL. 8, 1994